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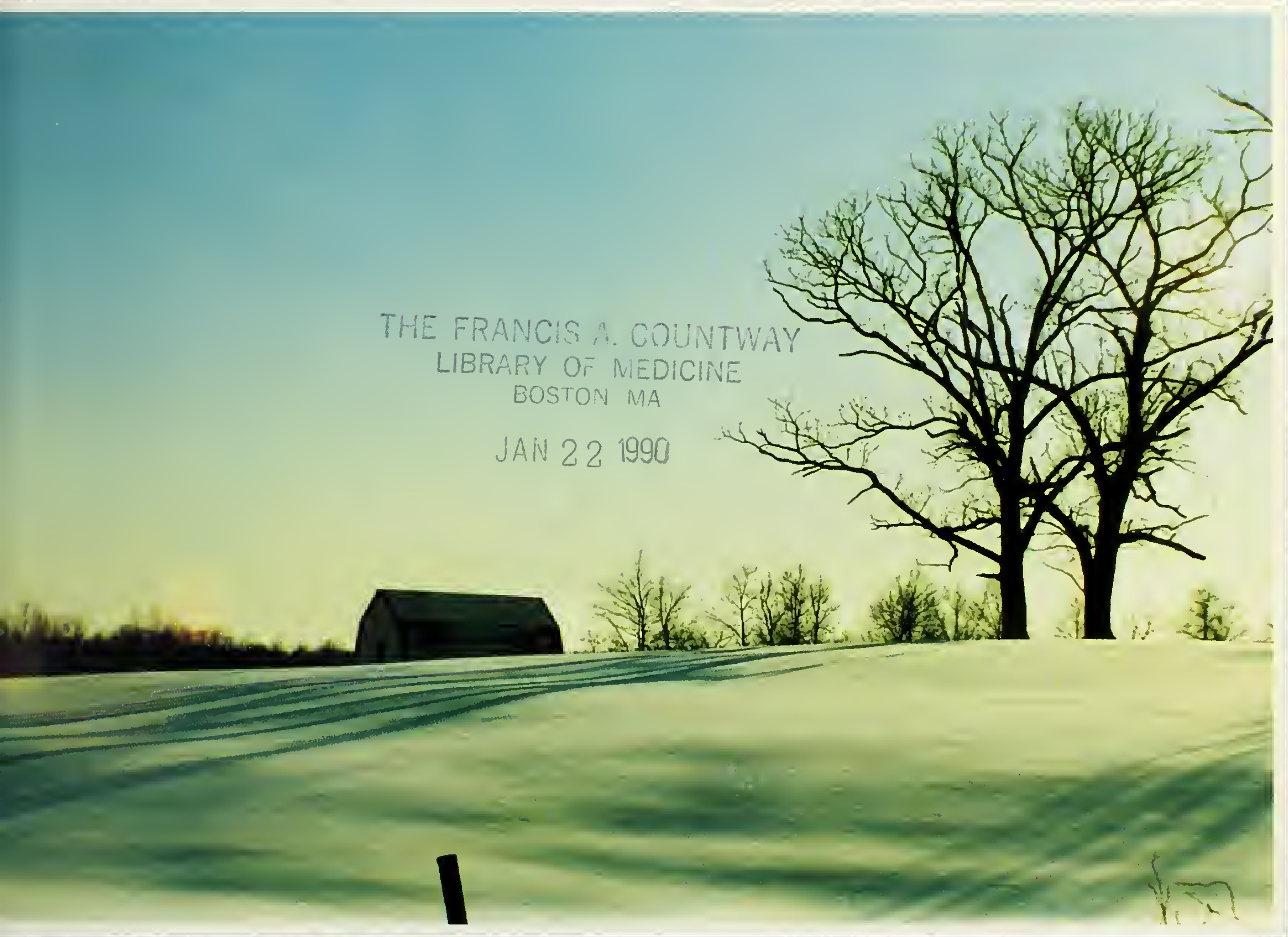
Missouri Medicine

Journal of the Missouri State Medical Association

January 1990



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GUEST EDITORIAL

by Ramona M.Chapman, M.D.
Associate Editor

We Can Prevent Lung Cancer

We doctors wield enormous influence on the behavior of our patients. Are we doing our part to encourage our smoker-patients to quit?

In this issue of **Missouri Medicine** is the first of a series of articles on chronic disease trends in Missouri. This harbinger, "Lung Cancer Trends in Missouri," will be followed by heart disease trends, breast cancer trends, racial differences in chronic disease mortality, use of tobacco by Missouri children, and other topics of like interest and importance to us Missouri physicians.

The importance of this lead-off article is contained in a grim statistic: "In 1987, 3,167 people died of lung cancer in Missouri. This was 29% of cancer deaths and 6% of all deaths in the state." Eighty to 90% of lung cancers (80% in women, 90% in men) are caused by tobacco smoking. All such cancer deaths must be classed as preventable. Lung cancer would certainly recede if smokers stopped smoking and no one else began. A smoker's risk of lung cancer begins to diminish whenever he stops. Do smokers know it? Do they believe it?

Certain factors weigh heavily against Surgeon General Koops' goal of a smokeless society. The position of the tobacco industry is that smoking does *not* cause cancer, and their billions of advertising dollars are annually invested to entice Americans to smoke up. Congress allocates enormous federal subsidies to the tobacco industry. The idiotic clamor for "smokers' rights" hampers efforts to diminish pollution of public places. Hospitals and supermarkets continue to profit from the retail sales of cigarettes and continue to condone smoking on the premises.

We doctors wield enormous influence on the behavior of our patients. Too seldom do we bring that influence to bear on our patients' smoking addictions — unless he is already a pulmonary invalid. I ask my smoker-patients, "Has a doctor ever urged you to quit?" Almost to a man, the answer is, "No."

We may be outgunned by the greed of the industry and the craveness of the Congress, but we can and should do our best with what influences we have in the place it counts: the smokers of America in our offices. ■

Editor's Note: Dr. Chapman is an oncologist in private practice in Joplin.

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GUEST EDITORIAL

by James Benjamin,M.D.

One physician wonders if there isn't a way to design interactions to empower others to make appropriate choices for their lives.

Reflections On An Old Man, Moods, Life and Death

An old man died this week. He had been a patient of mine, although I hadn't known him long. He entered the hospital after having fallen at home; his family found him confused and bruised and brought him to the emergency room. His mind was much clearer the next day but he didn't know what had happened. Even now I'm not sure what caused his problem, but I suspect a ministroke.

In time he became alert and oriented, but it was soon clear that he could no longer care for himself the way he always had. He needed help just to walk a few feet to the bathroom or to sit up in bed to be examined.

A few days before he died he asked me suddenly if I thought he would be able to drive again. "No," I said, "no, that wouldn't be a good idea. You might hurt yourself or someone else." Very reasonable, I thought; I sure wouldn't want to be on the road with the old man. But I tempered what I had said by adding that we would see how he did, that maybe, in a month or so, he might be able to drive again. I didn't believe that for a second. He said, "if you take away my driving, you might as well take. . ." His voice trailed off, but I knew that he was thinking, "my life." I heard what he said, but we didn't talk more about it. After all, driving couldn't be that important.

We also discussed whether he would be going home when he got out of the hospital. (I was already making plans with his family and the Social Services Department to transfer him to a nursing home.) "Can't you see," I said earnestly, "how hard it is for you to do even the simplest things, how much help you need? There just isn't any way you can manage at home. Maybe we can let you go to a convalescent home (my euphemism for a nursing home, so that patients can have the illusion that someday they may leave) for awhile, then home when you get stronger." In my mind, I knew he had seen the last of his home. His last words to me were, "try to get me home, Doc."

Later that day the nurses called to tell me that he was not doing well; his abdomen was swelling and his blood pressure was dropping. He had had nothing wrong with his GI tract up to that point. When I saw him later that day he was, indeed, worse. He wasn't complaining but his abdomen was distended. I called a surgeon. Later that evening, he went to the operating room and had part of his large intestine removed because of pseudomembranous colitis. He was not to be cured though; in the intensive care unit, in spite of the best support that a modern hospital can give, he died a few hours later.

In thinking about the time during which his life and mine were interwoven, I have reflected on our conversations. For this old man, being able to drive and live at home

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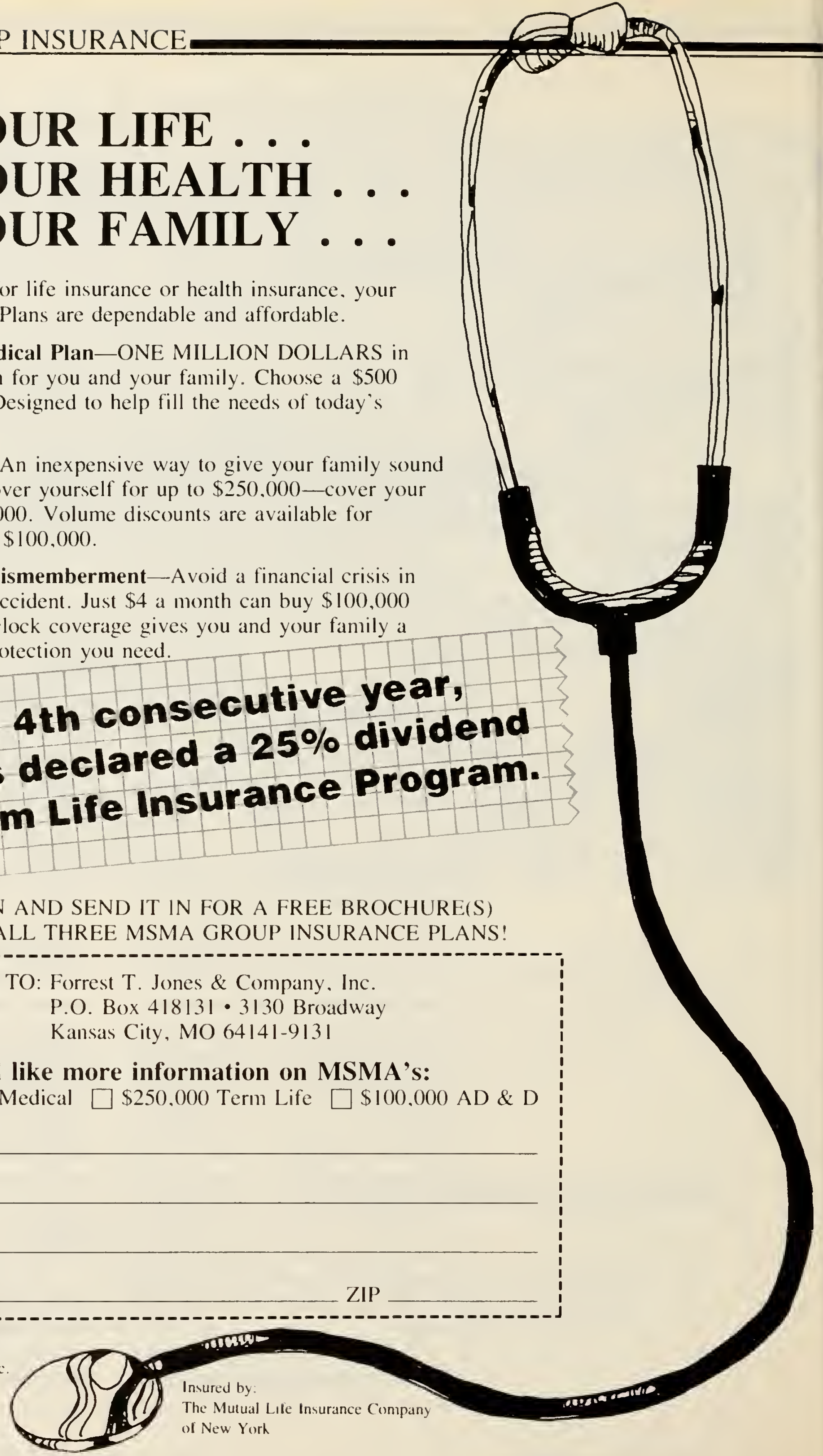

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EDITOR'S DESK

by Donald G. Sessions, M.D.
Editor

Medicine and Technology

Great physicians, those we would like to be like, have a combination of knowledge, experience, insight, and wisdom. They have an ability to approach clinical issues with a focused yet global overview. These physicians are knowledgeable in a special way. They have a reportoire of medical options and actions "at the ready" which can be brought forth at appropriate moments. Although this appears to the inexperienced as improvisation, it is more than that. It is the result of years of training and experience. Donald Schon has addressed this phenomenon in his book, **The Reflective Practitioner — How Professionals Think In Action.**[1]

> "The workaday life of the professional depends on tacit knowing-in-action. Every competent practitioner can recognize phenomena — families of symptoms associated with a particular disease, peculiarities of a certain building site, irregularities of materials or structures — for which he cannot give a reasonable accurate or complete description. In his day-to-day practice he makes innumerable judgments of quality for which he cannot state adequate criteria, and he displays skills for which he cannot state the rules and procedures. Even when he makes conscious use of research-based theories and techniques, he is dependent on tacit recognitions, judgments, and skillful performances."[2]

These professionals can "think on their feet." Great surgeons can creatively "think at the table" in the midst of an operation. In fact, surgical training involves learning by doing in such a way that we can think about doing procedures as we do them. Master surgeons can teach their students to be in a surgical dance with their patients in such a way that surprises are welcomed as an opportunity for the next action. At these times, Schon says, professionals reflect-in-action in such a way that the reflection focuses "interactively on the outcomes of action, the action itself, and the intuitive knowing implicit in the action."[3]

Martin Heidegger, the German philosopher, addressed the question of technology.[4] Technology, he said, is thought of as a man-made means to an end established by man.[5] But, he said, technology is more than this. The word stems from the Greek, *techne,* which is the name for the activities and skills of the craftsman as well as the fine arts and the arts of the mind. Technology is a mode of bringing forth or revealing.[6] Heidegger goes on to discuss that modern technology has been created by man who cannot control it. Man drives technology forward by enframing (Gestell) which lets what presence comes forth out of concealment. Modern science's way of representing, he says, pursues and entrapps nature as a calculable coherence of forces.[7] Thus man reveals nature by ordering it, by putting it in an understandable framework. The danger with this, he says, is that man as orderer or framer of the technology can come to the point where he himself will be taken for the technology.[8] This is where the process

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Editor's Desk

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of ordering occurs rather than what he calls the revealing.

> "The coming to presence of technology threatens revealing, threatens it with the possibility that all revealing will be consumed in ordering and that everything will present itself only in the unconcealedness of standing reserve. Human activity can never directly counter this danger. Human achievement alone can never banish it. But human reflection can ponder the fact that all saving power must be of a higher essence than what is endangered, though at the same time kindred to it."[9]

The question Heidegger raises concerning technology confronts the danger that in man's ordering of nature (of which he is a part), in the scientific method that aims at total mastery, that man himself can become indistinguishable from the technology. It is the technological framework, the attempt to enclose all human beings in a particular claim that Heidegger calls enframing.[10] Technology can reduce man, equipment, and activity to a "standing reserve" or stockpile which would be available for technological purposes. Heidegger points out that one of the original meanings of the Greek, *techne*, was a revealing that brought forth and made present as in creation (poesies) in the fine arts and poetry. He suggests that the kind of revealing of human beings that occurs in the work of art could possibly be utilized by man to address the issues brought up by man's technology.

The advances of medical technology are miraculous. Everyone wants to believe that their doctor has advanced technical competence. As medicine becomes more "scientific" we become more enthralled with the idea of mastery of "it all." This is what Heidegger calls enframing where we try to put it all in order. But human beings, although machine-like in many ways, are not machines and medical approaches based solely on a mechanistic model have always failed. Humans will not long tolerate being treated as things, as cases, as pieces of meat.

So here is the conundrum. How can we use the most advanced technology in caring for people and at the same time empower their humanity? How can we be technologic experts and reflective practitioiners? Some of us can get by practicing the "art of medicine" alone. Others can get by being "technically competent" alone. For most of us, however, this does not work. I claim that this is one of the major concerns of contemporary medicine. How can we begin to approach this issue? Heidegger suggests a move in the direction of art and poesies in addressing this concern. I interpret this as a recommendation not merely to study the arts and the humanities, but to actually learn to be artistically creative in our daily lives. That certainly is a game worth playing. ■

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President's Page

by Marvin A. Singleton, M.D.
MSMA President

The old saying about the squeaky wheel is true in politics. If physicians are not heard from, our share of the reimbursements will certainly be diminished or cut out.

Just Compensation

Having recently returned from Washington, D.C., and hearing the debates on the catastrophic health care bill of both the Senate and the House, it is my firm conviction that the state of the health care delivery system in America is in turmoil. Coupled with the fact that in 1980, the federal deficit was $700 million and this year will be more than $3.1 trillion, something must be done or the budget and the national economy is headed for a "train wreck" as the old saying about the squeaky wheel is true in politics. If physicians are not heard from, our share of the reimbursements will certainly be diminished or cut out. There is another saying in Washington, D.C., that associations and organizations, in order to survive, need to "take part or be taken apart."

With the nearly total assurance that our compensation and reimbursements for services rendered to patients will be diminished, I feel that physicians in Missouri should look at "just compensation" in whatever area that they may practice. There are two particular areas that I have never quite understood why physicians are not being reimbursed for their services and their time and effort. The first is in the area of home health and home care activities, including a number of other activities such as hospice and other out-patient and nursing home areas. In the spirit of volunteerism, I think physicians have been caught providing services at no cost to either the patient or home health agencies. But with the rapid development of for-profit home health agencies, it no longer makes sense that physicians would prescribe, act in a consultant manner, and often a direct backup with 24 hour coverage for home health agency patients with all the assumed risks involved and liabilities.

The fact that many of the recipients of home health care agency services are our patients should not influence the fact that we are providing services to home health care agencies gratis. It appears to me that there should be some professional charge to home health agencies or to the patients; whether it is paid directly by patients or by the home health care agencies makes little difference in that what we are asked to do is provide managed health care supervision without being reimbursed. I am in the process of requesting determination from Medicare and Medicaid on the advisability of legality of charging a sur charge for managed health care. So often, the physician has no contact with the patient, but is simply sent a lengthy form by the home health agency to study, peruse, and to finally sign his name to without receiving any remuneration. Home health agencies certainly get reimbursed much more than a physician does for making a personal home visit. I believe that it would be legal to charge a consulting fee or enter into a consulting contract with home health care agencies to provide certain professional services to their clients. Many times I have been asked to sign forms dealing with health care needs of clients of the home health agencies that were not within my specialty. What ambulatory orders

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President's Page

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or bowel preparations have to do with otolaryngology, certainly does not make a whole lot of sense. Therefore, if home health agencies want physicians to back them up, or to write orders for clients, they should be willing to pay the physicians for those services, or see that the patient pays for those management services as well.

The other area in which a "just compensation" is not seen by physicians in Missouri is when the physicians perform services for hospitals, corporations, and other health care entities that are mandated federally or statewide. If the physicians did not provide those services for the hospitals generally or for ambulatory centers or other entities, those hospitals would have to hire physicians to perform the same services. Quality assurance is a good example. Many times physicians and physician committees perform a tremendous amount of free labor in the basement of some hospital for generally a semi-annual steak dinner. The "just compensation" was recognized by the federal government a number of years ago when they allowed $55 to be paid to physician examiners of charts. Many hospitals collected that for the physicians; however, the physicians themselves did not see that reimbursement. The new PRO organization recognized the need to pay physician reviewers, and has established a fee schedule for doing that with Medicaid patients. I think that the medical and dental staff of the hospitals should also now contract with hospitals to pay their members for the various services performed for the hospitals. No longer are most hospitals charitable. Many are non for-profit, however, most are in fact making a profit, the cost of which is passed on to the ultimate consumer, the patients. Physicians should be reimbursed like any other labor group within the hospital for required services, and they should demand a "just compensation." When I first went into practice, my family and I could be hospitalized with no charge. Then it changed to being hospitalized for the insurance costs only; and now it is being hospitalized like everyone else, with perhaps some services being discounted the same as the cafeteria employees, janitors, or nursing staff.

A "just compensation" by all those concerned in the health care field certainly indicates that physicians who are performing services that would require payment by any other name would also be reimbursed. If physicians want to provide service for free, I think that it should be recognized as such, the benefit passed on to patients with reduction of charges. ■

Guest Editorial

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were important, so important that at some level he didn't want to go on without them. Even though I can't prove it, I saw his mood shift to despair when he suspected, and I confirmed, that his life would no longer be as it had been. With no possibilities for independent living available to him, he had no future. He could no longer construct meaning for himself.

In retrospect, I realize that my mood also shifted. At first optimistic enough to make plans for his discharge, given his improved mental status, it changed to resignation that his life would never again be the way he wanted. Somehow he was as aware of my mood shift as I was of his. I speculate that, through this interaction, the shift in mood also turned some kind of switch in him, a switch that in one position read "life" and the other "death." He was ready to die and his body cooperated.

As I mature as a physician I'm beginning to see how important conversations and moods are to having peace in my life. I wonder what I could have done or said that might have produced a different mood in the old man, one which might have altered the outcome of his hospitalization and produced some peace for him. I don't fault myself for my actions and I don't have any illusions that one person can magically call forth a specific mood in another. Yet, on one hand, I can't help wondering if there isn't a way to design interactions to empower others to make appropriate choices. On the other hand, maybe the old man's choice was perfect. ■

Editor's Note: James Benjamin, M.D., practices medicine in Maryland. He is an internist, specializing in pulmonary medicine.

Auxiliary Message

by Pattye Barbee
MSMAA President

For information and materials, contact:
Literacy Volunteers of America, 5795 S. Widewaters Parkway,
Syracuse, NY 13214
315/445-8000

Battling Illiteracy: Each one, Teach one

In recent years, the American Medical Association has become increasingly aware that many medical problems are not only health issues but also social issues. The treatment calls for an adjustment in lifestyle, not just medical treatment. And it has called upon the medical community to promote education and awareness in many areas, including diet and exercise, tobacco and alcohol, teen pregnancy and AIDs, sport and recreational equipment, automobile child restraint and seat belts.

This has opened the door for the Auxiliary: as societal problems have manifested at the doorstep of medicine, pulling heavily on medical manpower, technology, and costs, the volunteer effort of the spouses has become ever more important.

One of the most subtle, insidiously creeping problems society faces is illiteracy. What is functional illiteracy? Very simply, the inability of an individual to use reading, speaking, writing, and computation skills in everyday life — filling out an employment application, following written medical instructions, reading a menu or a bus schedule. What is the extent of the problem? Conservatively, 26 million adults in the U.S. — 365,000 in Missouri.

The domino effect cannot be ignored. The students doing poorly in school become discouraged and drop out. Contrary to earlier times, there is little to drop out *to*. Slots in farm fields, mines, and factories that once absorbed unskilled workers are vanishing. Little is available for them except minimum-wage service jobs with no chance for independent livelihood and no future. They become extremely vulnerable to those who prey upon their misfortunes with drugs, crime, and prostitution. It must be acknowledged that every dropout is not illiterate and every illiterate does not drop out; some make it in our society; but the correlation is strong.

A disproportionate share of these dropouts find themselves in one of the troubled groups of our society: more than half of the nation's welfare families are headed by a dropout; 65% of the people in prison are dropouts, and 85% of juvenile offenders have reading problems: four out of five unwed mothers are dropouts and one of every six is a young teen. Expectedly, the problem perpetuates itself: poor achievement and dropping out are common among children of illiterates.

The costs to society are staggering; the burden to medicine is overwhelming. Medicare, Medicaid, Med-Assist, and write-offs have become the common vocabulary of the physician; charity care facilities in Missouri are threatening to "lock the door"; and the dropout/illiterate number is increasing in the United States by 2 million a year. The Governor's Advisory Council on Literacy, chaired by Secretary of State Roy Blunt, presented its final report in October. Its findings are that Missouri will be facing a short-

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Auxiliary Message

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age of qualified workers in the coming decade. A growing share of entry-level jobs require more skills than in the past, and as the "baby bust" slashes the number of new workers by one-fifth, the problem will get worse.

With all these facts looming at us, I firmly believe that one of the most positive steps we can take is to reach out and teach. The AMA Auxiliary this past June adopted a resolution to encourage state and county auxilians to support programs to promote literacy in every possible way and that these programs be undertaken in cooperation with state and county medical societies. If we can help prepare young people for jobs and life, and thereby improve the likelihood of their contribution to society, we can have an impact on the health of society and the cost of that health.

Illiteracy costs the economy $225 billion a year, a large portion of which we bear in direct medical costs or indirect tax dollars. With the over-65 age group increasing and the working-age group shrinking, we can ill afford not to make every effort to see that these new workers are prepared to handle the jobs and the challenges.

In the oft-quoted remark of Harvard President Derek Bok: "If you think education is expensive, try ignorance."

Physicians and Auxilians, hear the cry: Each one, teach one.

■

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*Although your name will **not** be used in the journal, please include your name and phone number so that Dr. Woerth may contact you if she needs additional information to answer your question.*

Dear Dr. Woerth:

We find that Medicare is now denying services that were once covered. In addition, we find that more services are being denied as "medically unnecessary." When this happens, we are not allowed to charge the patient for the services rendered. As a consequence, we are having to write-off a great many of the fees for Medicare services we render. Is there anything that can be done to avoid this?

L.W.

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This form must be signed prior to rendering the services in question. It must be signed by the patient each time services are rendered that may be denied as medically unnecessary. It cannot be used as a blanket form to cover any Medicare services that are denied payment. ■

Sample Form

MEDICARE LIMITATION OF LIABILITY

Patient Name ____________________ Medicare # _______________

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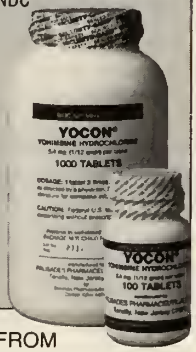

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SPECIAL SERIES

Pneumocystis Carinii Pneumonia: Advances in Diagnosis and Therapy

Neil A. Ettinger, M.D.
St. Louis, Missouri

As the AIDS epidemic has evolved, so have improvements been made in diagnosis and treatment of Pneumocystis carinii pneumonia, the most common opportunistic infection in AIDS. Advances, changes, and current research are discussed.

Pneumocystis carinii pneumonia (PCP) is the most common opportunistic infection in the Acquired Immunodeficiency Syndrome (AIDS). The disorder occurs in as many as 80% of AIDS patients at some point in the course of their illness and is the first manifestation of AIDS in approximately 40% of patients. By 1992, more than 100,000 cases of PCP are expected to have occurred. As the AIDS epidemic has evolved, improvements in diagnosis, treatment and prevention have been made. This review highlights these advances and makes practical patient management observations and recommendations.

Recognition

The most important part of making the diagnosis of PCP is recognizing it as a possibility. The initial episode of PCP is characterized by an insidious course, with fever, non-productive cough and progressive dyspnea. The symptoms usually evolve over two to four weeks and are often not recognized by physician or patient as part of a major illness. By the time the patient is hospitalized, hypoxemia is often present, and tachypnea and fever are usually prominent. Physical findings are usually minimal, with rales present only 50% of the time. The radiographic manifestations are variable, but diffuse interstitial or alveolar infiltrates are typical. Nodules, cavitary lesions, unilateral infiltrates and pneumothoraces are being reported with increasing frequency. In general, a chest radiograph should not be relied upon to make the specific diagnosis of PCP. A small percentage of patients will have normal chest roentgenogram findings.

Diagnosis

The clinical and radiographic presentation of PCP is non-specific. Cytomegalovirus pneumonia, pulmonary Kaposi's sarcoma, and a variety of fungal infections cause similar symptoms, signs and radiographic changes.

The specific diagnosis of PCP is made only after examination of appropriately stained tissue, lavage fluid or sputum. In general, a diagnostic procedure should always be performed, both to confirm the presence of *P. carinii*, thereby justifying 21 days of potentially toxic therapy, as well as to identify any co-pathogens, which are common in AIDS-related pulmonary disease.

Sputum Induction

The examination of properly induced sputum is rapidly becoming the diagnostic procedure of choice to confirm the presence of *P. carinii* in HIV-positive patients with pulmonary symptoms. In experienced hands, the technique has a 50% to 75% sensitivity and eliminates the need for more invasive diagnostic procedures.

A variety of stain preparations are used, including the gomori-methanamine-silver (GMS) stain, which is time-consuming to prepare, and the modified giemsa stain, which takes little more than an hour to prepare and examine. An immunofluorescent monoclonal antibody has been developed recently for the rapid diagnosis of PCP from induced sputum. The reagent is commercially available. Early results suggest that the test has an 80% sensitivity, and it is expected ultimately to replace existing, more time-consuming methods of examining induced sputum.

Bronchoscopy

The gold standard for the diagnosis of PCP is transbronchial biopsy, which has a sensitivity of 95% or more. Bronchoalveolar lavage (BAL) has a 90% sensitivity in the hands of an experienced cytologist. When possible, both biopsy and lavage should be performed, as they are complementary in the process of identifying opportunistic pathogens. In the case of granulomatous PCP or the "relapse" PCP that occurs during aerosolized pentamidine therapy, a smaller number of organisms is present in the clinical sample, often giving negative lavage results but positive biopsy findings. In addition, it is possible to make the diagnosis of other opportunistic infections from the same clinical sample, both by culture and special staining techniques.

Bronchoscopy should always be performed in patients with deteriorating conditions who were placed on anti-PCP treatment empirically, or in whom diagnosis was based on examination of induced sputum.

Pulmonary Function Testing

Pneumocystis carinii pneumonia is often accompanied by changes in pulmonary function. Specifically, the presence of a restrictive ventilatory defect, along with a decrease in diffusing capacity (DLCO) usually suggests that a continuing pulmonary process is present. However, these changes are non-specific and may be present during the course of other pulmonary opportunistic infections. Therefore, pulmonary function testing is most often used in a patient with pulmonary symptoms and fever who has normal chest radiographic findings. Significant changes in pulmonary function would warrant proceeding to sputum induction testing and, if necessary, bronchoscopy.

A gallium scan can also be used to confirm the presence of pulmonary inflammation. However, this test is also non-specific for PCP and should be followed by bronchoscopy if positive.

T-Cell Counts

Although the absolute T-4 count cannot be used to make a specific diagnosis of PCP, it has been observed that PCP usually does not appear until the patient's CD4 counts have dropped below 250/mm^3. Large epidemiologic studies have confirmed this observation, and prophylaxis against the first episode of PCP has been suggested for asymptomatic, HIV-positive patients whose CD4 counts are below this level.

The mean CD4 count of patients having their first episode of PCP is approximately 100/mm^3. Therefore, while not diagnostic, the patient's CD4 count can be used to help define the period of greatest risk for the development of PCP. The CD4 count can also assist the physician in evaluating the likelihood of the disease's occurrence in previously asymptomatic individuals with unusual clinical and radiographic findings.

Treatment

The past several years have seen improvements in our understanding of the use of pentamidine and trimethoprim-sulfamethoxazole (TMP-SMX) in the treatment of PCP. As a result, patients are generally doing better, with survival rates for first episodes approaching 80% to 90%.

Standard Therapy

Therapy with either intravenous pentamidine or TMP-SMX, or oral TMP-SMX is standard, with a full 21-day course of either drug recommended. The incidence of side effects with these drugs is high (often close to 50%), and in the past, a change in therapy was required. However, recent studies have indicated that simply reducing the dose of pentamidine from 4 mg/kg per day to 3 mg/kg per day will result in improvement of neutropenia and renal insufficiency, the most common side effects of the drug. Similarly, a reduction in the TMP-SMX dosage often results in improvements in neutropenia or anemia. Also, the use of a non-steroidal anti-inflammatory agent in relatively high dose (e.g., naproxyn, 500 mg every 8 hours) usually results in marked improvement of rash or drug-fever when these side effects occur during TMP-SMX therapy. For the most part, patients are able to complete the drug therapy despite the appearance of mild to moderate side effects, if attention is given to dosage adjustment and symptomatic relief.

Steroids

The use of corticosteroids in the treatment of PCP is controversial. Early investigators reported marked and dramatic improvement in patients with severe PCP when corticosteroids were administered. However, a recent randomized, blinded study failed to confirm their observations. Given the small numbers of patients in these studies, no statistically significant differences have been observed. However, it is the experience of many physicians treating PCP patients that the use of corticosteroids can bring dramatic improvement in the conditions of patients who are otherwise failing therapy. At this time, a brief course (48 - 72 hours) of intravenous or oral steroid therapy is reasonable in patients who either appear to be failing therapy or are progressing rapidly to respiratory failure. It has been observed that the response to steroid therapy, if it occurs, is rapid and usually within the first 40 to 72 hours. The use of steroids should be undertaken only if the diagnosis of PCP has been made with confidence. It is hoped that larger studies will be undertaken to more accurately answer the question of whether these agents are beneficial, and to which patients they should be administered.

New Therapeutic Alternatives

A nationwide trial comparing aerosolized pentamidine therapy and intravenous TMP-SMX therapy in patients with mild PCP has recently been completed. Preliminary results indicate that both treatments are effective in the treatment of mild disease. However, the group receiving aerosolized pentamidine experienced significantly fewer side effects than the group receiving the sulfa drug. Caution is advised in the use of this therapy in patients with moderately severe to severe PCP. The penetration of aerosolized drug into lung tissue severely involved with pneumonia is incomplete and may not benefit the patient.

Another drug currently under investigation is trimetrexate, a folate antagonist that is significantly more potent than trimethoprim. The drug is administered with leucovorin rescue, as the potential hematologic toxicity of the agent is profound. Despite the potential for these serious side effects, the drug is extremely well tolerated and appears, in early studies, to cause fewer side effects than either TMP-SMX or pentamidine. This drug has been used successfully for salvage therapy in patients with severe PCP, or disease that has been refractory to treatment with standard agents. A nationwide blinded study comparing this drug with intravenous TMP-SMX is now approximately halfway to its completion.

Other agents currently under study are dapsone/trimethoprim, primaquine/clindamycin, and combinations of intravenous and aerosolized pentamidine.

Response to Treatment

It should be noted that, in general, PCP is slow to resolve. Worsening arterial oxygenation, respiratory rate and dyspnea, lasting three or more days before improvement, is common in all relatively successful treatments. In many patients, clinical response is delayed as long as seven to 10 days. Likewise, radiographic infiltrates often worsen initially, and do not improve until after two to three weeks of therapy. Assessment of treatment success is, therefore, difficult and should not be undertaken prematurely.

Despite improvement in the treatment of *P. carinii* pneumonia, several high risk categories of patients do not do well with therapy. These include patients who have moderate to severe hypoxemia, patients who have co-pathogens in the lung, and patients who experience a recurrence of PCP. New drugs and different approaches to therapy are necessary for these patients.

Prophylaxis

It has been documented that 40% to 50% of patients will have a recurrence of PCP after their initial episode. Excellent prophylaxis has been achieved with TMP-SMX therapy in a variety of immunocompromised hosts, particularly organ transplant recipients, and is effective in HIV-infected patients who are able to tolerate the drug. Although TMP-SMX should be tried first, intolerance has limited the use of the drug for prophylaxis. Recent studies indicate that the monthly use of aerosolized pentamidine can reduce the risk of relapse by more than 50% and is well tolerated. Current dosage recommendations are 300 mg or aerosolized pentamidine nebulized with the Respirguard II nebulizer over 30 to 40 minutes on a monthly basis. In addition, similar prophylaxis should be provided to asymptomatic, seropositive patients whose T-cell counts have dropped below 200/mm^3.

Recurrence of PCP while receiving aerosolized pentamidine prophylaxis often results in a different clinical presentation of the disease. Patients often have bilateral upper pulmonary lobe infiltrates and relatively mild symptoms, with mild impairment of oxygenation. These patients usually respond quickly to treatment with intravenous pentamidine or TMP-SMX. Relapse in these patients appears to be related to the pattern of distribution of the aerosolized drug during inhalation in the seated position. Current studies are investigating whether a change in position, or increase in drug dosage can reduce the risk of recurrence.

Conclusion

The diagnosis and treatment of PCP continues to evolve. Newer methods of diagnosis have recently been introduced, as well as less toxic methods of drug administration. New drugs are also being tested nationwide for the treatment of mild and severe PCP.

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The Author

NEIL A. ETTINGER, M.D.

Dr. Ettinger is from the Respiratory and Critical Care Division, Department of Medicine, Washington University School of Medicine, St. Louis, Missouri. He is associated with the AIDS Clinical Trials Unit at the Medical School.

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SPECIAL SERIES: Chronic Disease Reports

Lung Cancer Trends in Missouri: A Cause for Concern

Ross C. Brownson, Ph.D., Jian C. Chang, Ph.D., and James R. Davis, M.S.
Columbia, Missouri

Lung cancer mortality continues to increase in Missouri and nationwide. The physician's role in promoting smoking cessation may be one of the most important factors in reversing this trend.

The lung cancer epidemic is one of the major preventable public health tragedies of modern times. Since 1950, the overall cancer mortality rate has changed little, whereas the lung cancer mortality rate has increased dramatically for both men and women.[1,2] In 1987, lung cancer caused the death of 3,167 Missourians. This was 29% of cancer deaths and 6% of all deaths in the state.[3]

Two factors account for most of the lung cancer deaths observed during the past several decades. Cigarette smoking is the primary preventable cause of lung cancer.[1] Cigarette consumption increased sharply in the United States during World War II and continued to rise until the mid-1960s.[4] It is currently estimated that 90% of lung cancer mortality in men and 79% in women is due to smoking.[5] The high number of lung cancer deaths is also attributable to its low five-year survival rate. Nationally, only 13% of lung cancer patients live five or more years after diagnosis.[5]

To examine the lung cancer problem in Missouri, we analyzed mortality and survival data from national and Missouri Department of Health data bases.

Methods

Mortality Analyses. Data from the National Cancer Institute[6] and the Missouri Center for Health Statistics[3] were used to examine the trends in lung cancer mortality from 1950 to 1987. We defined lung cancer as including cancers of the trachea, bronchus, lung, and pleura (ICD 162, 163). An average annual age-adjusted mortality rate was calculated for each of three decades (1950-1959; 1960-1969; 1970-1979) and for 1980-1987. Mortality analyses were limited to whites due to the lack of denominator data for other races.

Survival Analyses. Data from the Missouri Cancer Registry (MCR) were used to determine five-year survival rates for lung cancer by stage at diagnosis.[7] The MCR is a statewide central registry for which cancer reporting by Missouri hospitals has been mandated by law since 1984. For our analyses, only lung cancer data from hospitals that routinely submit follow-up information (mainly American College of Surgeons-approved hospitals) were used. The survival

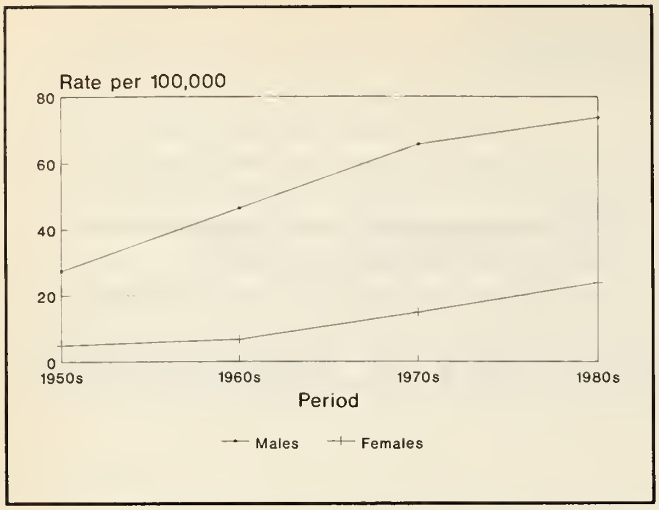

Fig 1. Trends in lung cancer mortality among white males and females, Missouri, 1950-1987 (age-adjusted to the 1960 U.S. standard population).

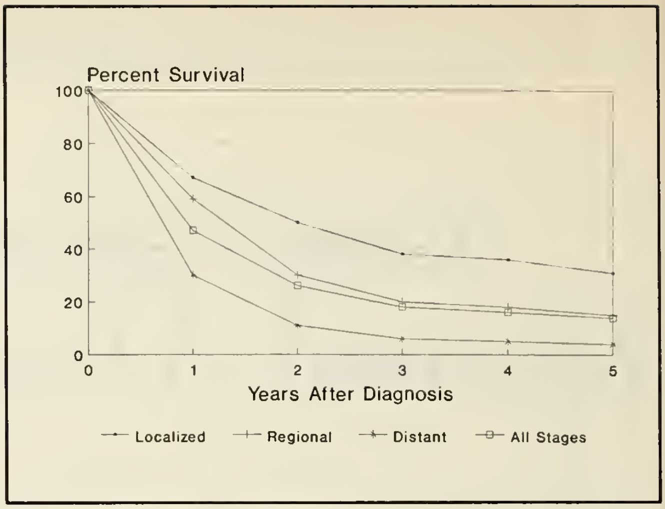

Fig 2. Five-year lung cancer survival patterns among whites, Missouri, 1980-1987.

analyses were based on 11,099 lung cancer cases from 1980 to 1988. This represented 84.1% of all lung cancer cases reported to the Registry for this period. Relative survival was calculated using life table analysis according to the method of Ederer et al.[8]

Results

The lung cancer mortality rate in men increased from 27.5 per 100,000 in the 1950s to 73.8 per 100,000 in the 1980s (Fig 1). This was an increase of 169%. Among women, the rate per 100,000 rose from 5.0 in the 1950s to 23.9 in the 1980s, representing a 377% increase. From the 1970s to the 1980s, lung cancer mortality in men increased 12%, compared with 61% for women.

Figure 2 shows some important differences in lung cancer survival according to stage at diagnosis. Among patients diagnosed with localized lung cancer, five-year survival was 30.8%. In contrast, survival rates for regional and distant lung cancer were 15.4% and 3.6%, respectively. Five-year survival for all stages combined was 13.8%.

Comment

Missouri rates of lung cancer mortality and survival compare quite closely with United States data.[6,9] For example, in Missouri in the 1980s, the lung cancer mortality rates increased an average of 0.5% per year in men and 4.1% per year in women. This compares with national average increases per year of 0.8% in men and 5.7% in women.[2] The overall survival rate in Missouri whites was 13.8%, compared with 13% survival in the national Surveillance, Epidemiology, and End Results Program.[9]

Considering its frequency and low survival, lung cancer will continue to be a major public health problem in the coming decades. Estimates from the National Cancer Institute suggest that if current trends persist, lung cancer rates in men will remain relatively stable in the 1990s, then gradually decrease.[10] Among women, lung cancer mortality is expected to peak around the year 2010 and then begin a decline.[10]

Of the 10 principal cancer types in the United States, only pancreatic cancer has a lower five-year survival than lung cancer. There is currently no proven method for early detection of lung cancer through large-scale screening.[11] Further, even when lung cancer is detected early, survival remains relatively low. This suggests that primary prevention, through smoking control, is the only viable method to reduce lung cancer mortality in the near future.

Physicians can play a prominent role in smoking prevention and cessation efforts. Numerous studies have shown that minimal advice from a physician can have a powerful effect on smoking reduction among patients.[1,12] Although great potential exists, a substantial proportion of physicians are not routinely addressing smoking control in their practices.[5] Results from a recent national survey showed that only 45% of adult smokers reported that a physician had ever advised them to quit smoking.[13] Physician advice to quit smoking is as cost-effective as many other accepted medical practices and should become a routine part of health care services.[14]

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The Authors

ROSS C. BROWNSON, Ph.D.
JIAN C. CHANG, Ph.D.
JAMES R. DAVIS, M.S.

The authors are from the Missouri Department of Health. Dr. Brownson is director of the Division of Chronic Disease Prevention and Health Promotion, Dr. Chang is from the Missouri Cancer Registry, and Mr. Davis is chief of the Bureau of Smoking, Tobacco and Cancer.

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Reprints

Ross C. Brownson, Ph.D.
Division of Chronic Disease Prevention and Health Promotion
Missouri Department of Health
201 Business Loop 70 West
Columbia, Missouri 65203

For Your Information

Several excellent publications are available to assist physicians and other health care professionals who want to address smoking control more fully in their practices.

How to Help Your Patients Stop Smoking: A National Cancer Institute Manual for Physicians may be ordered by calling 1-800-4-CANCER.

Tobacco-Free Young America: A Guide for the Busy Practitioner, developed by the American Cancer Society, may be ordered by calling 1-800-ACS-2345.

C. Everett Koop, M.D., and other nationally recognized speakers will offer advice on counseling patients for smoking prevention and cessation at the "Tobacco Conference 1990: Forum for Professionals." The yearly conference, sponsored by the Missouri Coalition on Smoking and Health, will be held on March 8, 1990, at the Capitol Plaza Hotel in Jefferson City. For registration information, call Monica Eischen at 314/875-2218.

Palliative Radiation Therapy for Kaposi's Sarcoma in Patients with AIDS

Padma I. Raju, M.D., Tapan Roy, M.D.,
William Knight, III, M.D., Sain Ahuja, Ph.D., Robert McDonald, B.S.
St. Louis, Missouri

Kaposi's sarcoma is a common manifestation of AIDS, particularly in young male homosexual patients. Between 1987 and 1988, eight patients with Epidemic Kaposi's sarcoma received palliative radiation therapy. The authors' experience indicates that radiation therapy can provide good to excellent palliation for skin and oropharyngeal lesions.

Kaposi's sarcoma (KS) is a common manifestation of the Acquired Immunodeficiency Syndrome (AIDS), particularly in young male homosexual patients.[1] Researchers such as Cooper et al[2], Harris et al[3], and Noblet et al[4], have attempted to establish a role for radiation therapy in the treatment of KS. The objectives of treatment are the relief of pain, dysphagia, and edema from lymph node swelling, and to provide cosmesis. Good to excellent palliation of these symptoms has been achieved with low to moderate doses of radiation.[5] Although the lesions of KS in AIDS may be widespread, patients die more frequently from opportunistic infections not related to Kaposi's sarcoma.[6]

Materials and Methods

Between 1987 and 1988, eight male patients with KS received palliative radiation treatment at St. Louis University Hospital, St. Louis, and John Cochran Veterans Administration Medical Center, St. Louis, for lesions involving skin, oropharynx, and lymph nodes in the groin. Their ages ranged from 29 to 50 years old, with a median of 33. We irradiated 39 body sites in these patients, using a 5 MeV electron beam at 80% depth dose for skin lesions, and Co-60/4 MV x-rays for oropharyngeal lesions and groin nodes. Several contiguous lesions were included in a single treatment port (site). Oropharyngeal lesions were treated in two lateral ports. Groin nodes were treated with a single anterior port, with the dose calculated at a depth of 3 cm.

A total dose of 2,000 cGy in 10 fractions over two weeks was administered for skin lesions. Groin nodes and oropharyngeal lesions received 2,400 cGy in 12 fractions over 2-1/2 weeks. Six of eight patients, including the three patients with oropharyngeal lesions, also received concurrent treatment with zidovudine (AZT). One patient, with inguinal lymph node involvement, received combination chemotherapy.

Complete response (CR) was defined as the complete regression of the lesions within the treated volume for a period of at least three months. Minor resid-

Table 1
Treatment of Epidemic Kaposi's Sarcoma

PATIENT	SITE	CHIEF COMPLAINTS	TOTAL DOSE	NO. OF FRACTIONS	RESPONSE	SIDE EFFECT	FOLLOW UP	CURRENT STATUS
1.	Rt. thigh	Pain	2000cGy	10/2 wks	CR	None	12 mo.	Died of wide spread opportunistic infections.
	Lt. thigh	Pain	2000cGy	10/2 wks	CR	None		
	Rt. ankle	Pain	2000cGy	10/2 wks	CR	None		
	Rt. leg	Pain	2000cGy	10/2 wks	CR	None		
	Rt. elbow	Cosmesis	2000cGy	10/2 wks	CR	None		
	Front of chest	Cosmesis	2000cGy	10/2 wks	CR	None		
	Groins	Painful swelling	2400cGy +chemo	12/2½ wks	PR	None		
2.	Medial Rt. ankle	Ulcerated	2000cGy	10/2 wks	CR	None	9 mo.	Died of disease and infections.
	Rt. lower thigh	Pain	2000cGy	10/2 wks	CR	None		
	Medial rt. knee	Pain	2000cGy	10/2 wks	CR	None		
	Base of tongue, oropharynx and neck	Dysphagia	2400cGy	12/2½ wks	CR	None		
3.	Back of chest	Ulcerated lesion	2000cGy	10/2 wks	CR	None	7 mo.	Died of disease and infections.
	Front of abdomen	Cosmesis	2000cGy	10/2 wks	CR	None		
	Rt. upper thigh	Pain	2000cGy	10/2 wks	CR	None		
	Lt. arm	Itching	2000cGy	10/2 wks	CR	None		
	R. arm	Pain	2000cGy	10/2 wks	CR	None		
	Groins	Painful swelling	2400cGy +AZT	12/2½ wks	PR	None		
4.	Lt. ankle	Ulcerated	2000cGy	10/2 wks	CR	None	8 mo.	Alive
	Rt. arm	Pain	2000cGy	10/2 wks	CR	None		
	Oropharynx	Dysphagia and ulcers	2400cGy +AZT	12/2½	CR	None		
5.	Rt. ft. plantar surface	Pain	2000cGy	10/2 wks	CR	None	13 mo.	Alive
	Rt. lat. ft.	Pain	2000cGy	10/2 wks	CR	None		
	Rt. little toe	Pain	2000cGy	10/2 wks	CR	None		
	Rt. medial arm	Pain	2000cGy	10/2 wks	CR	None		
	Lt. middle toe	Pain	2000cGy +AZT	10/2 wks	CR	None		
6.	Ant. rt. leg	Pain	2000cGy	10/2 wks	CR	None	10 mo.	Alive
	Rt. ant. med. thigh	Ulcer	2000cGy	10/2 wks	CR	None		
	Oropharynx	Dysphagia & ulcers	2400cGy	12/2½ wks	CR	None		
7.	Rt. ankle	Pain	2000cGy	10/2 wks	CR	None	10 mo.	Alive
	Lt. breast	Painful swelling	2000cGy	10/2 wks	CR	None		
	Bk. rt. ear	Pain	2000cGy	10/2 wks	CR	None		
	Lt. big toe	Pain	2000cGy +AZT	10/2 wks	CR	None		
8.	Rt. five toes	Pain	2000cGy	10/2 wks	CR	None	8 mo.	Alive
	Lt. five toes	Pain	2000cGy	10/2 wks	CR	None		
	Rt. shin	Pain & ulcer	2000cGy	10/2 wks	CR	None		
	Lt. lat. ft.	Pain & itching	2000cGy	10/2 wks	CR	None		
	Rt. lat. ft.	Pain & itching	2000cGy	10/2 wks	CR	None		
	Rt. ankle	Pain	2000cGy	10/2 wks	CR	None		
	Lt. ankle	Pain	2000cGy	10/2 wks	CR	None		

ual induration or pigmentation was not considered to be caused by residual disease. Partial response (PR) was defined as diminution in size of the lesions, associated with partial or complete relief of symptoms — pain, itching, dysphagia.

Results

We irradiated 39 sites in eight patients. Complete response was achieved at 37 sites in seven out of the eight. Partial response was achieved in the remaining two sites (the groin) in the eighth patient. However, this patient had complete response of his treated skin lesions.

No severe toxicity was noted in any patient. Mild mucositis was noted in the patients treated for oropharyngeal lesions, but the condition did not interrupt their treatment.

Five of the eight patients are alive at 13, 10, 10, 8, and 7 months after radiation treatment. One patient, who experienced only partial response of his groin lesions, did not respond to subsequent combination chemotherapy. He died of disseminated disease and opportunistic infection 12 months after completion of local radiation therapy. The remaining two patients also died of KS and infections at 9 and 7 months after treatment. Results are summarized in Table 1.

Discussion

Radiotherapy has been an accepted form of treatment in patients with classic Kaposi's sarcoma, a disease known to have marked radiosensitivity. Lesions respond to doses well below the tolerances of surrounding normal tissue.[6,7] The role of palliative radiation therapy in patients with epidemic Kaposi's sarcoma, as is associated with HIV infection and AIDS, has been established in preliminary work by Cooper et al,[2,5] Harris et al,[3] Hill et al,[8] and Nische et al.[9] Doses ranged from 800 cGy in one fraction to 3,000 cGy in 10 fractions over two weeks. Cooper et al[10] noticed severe toxicity in patients who received oral radiotherapy for KS in AIDS. Three of our eight patients, who received a total of 2,400 cGy in 12 fractions over 2½ weeks, developed only mild mucosal reactions and completed the planned treatment without interruption. This low toxicity, we believe, is due to a daily dose fractionation of 200 cGy.

Conclusion

Though the number of patients treated for KS at our center is small, our experience indicates that radiotherapy can provide good to excellent palliation for both skin and oropharyngeal lesions. Long-term local control of the disease, with minimum toxicity, can be achieved with doses ranging from 2,000 to 2,400 cGy over two to 2½ weeks.

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The Authors

PADMA I. RAJU, M.D.
TAPAN ROY, M.D.
WILLIAM KNIGHT, III, M.D.
SAIN AHUJA, Ph.D.
ROBERT McDONALD

The authors are from the Department of Radiation Oncology and Hematology/Oncology, St. Louis University Hospital and John Cochran VA Medical Center, St. Louis, Missouri.

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Reprints

Padma I. Raju, M.D.
Department of Radiation Oncology
St. Louis University
3635 Vista at Grand Blvd.
P.O. Box 15250
St. Louis, Missouri 63110-0250

Hyperthermia Treatment of Brain Tumors

J. Alexander Marchosky, M.D., F.A.C.S. and Deborah M. Welsh, R.N.
Chesterfield, Missouri
Christopher J. Moran, M.D.
St. Louis, Missouri

Hyperthermia is a promising new therapy for malignant glioma, a brain tumor with grim prognosis. The authors describe their work with hyperthermia delivered directly to tumor tissue via heating catheters.

Malignant glioma is a devastating disease that presents a difficult challenge to medical and neuro-oncologists. The most frequently occurring primary intracranial tumor, gliomas account for more than 25% of cancers in the brain.[1] An estimated 10,000 to 12,000 primary brain tumors are diagnosed each year.[1] The male-to-female ratio is 2:1, and the peak incidence occurs in the fifth and sixth decades of life.[1] A tumor of the neuroglial tissue, the malignant glioma is highly invasive and extends into adjacent tissue by diffuse infiltration, thereby damaging the normal parenchyma. Clinical manifestations vary depending on the tumor's rate of growth and location within the brain.

Conventional methods of treatment — including surgical decompression, radiation applied either externally or via interstitial implants, and chemotherapy — have failed either to control or to cure these malignancies. Despite medical advances with these treatments, most cancerous brain tumors carry a poor prognosis. The two-year survival rate for patients with malignant gliomas is, at 10%, far from satisfactory.[1]

Hyperthermia, a new treatment under investigation, shows promise in killing neoplastic cells. The treatment involves the controlled elevation of temperature within a tumor, to cause tumor destruction. Extensive in vitro studies have demonstrated the antineoplastic effects of hyperthermia.[2,3] At temperatures of 41°C to 42°C, hyperthermia was found to be more cytotoxic to neoplastic cells than normal cells.[3,4] While the mechanisms of heat destruction are not fully understood, it appears that the structures controlling replication of the neoplastic cells are heat-sensitive.[3] This effect, combined with an increase in cell membrane permeability and disruption of cell respiration, produces irreversible damage in the tumor cells.[2] Investigators have reported the effectiveness of hyperthermia in cell environments which are hypoxic, hypometabolic, hyperacidic and poorly vascularized. This is of particular interest because cells within these environments are known to be resistant to radiotherapy and chemotherapy.[5] In addition, hyperthermia has been found to potentiate the effects of both radiation and chemotherapy.[6-10]

The anti-neoplastic effect of hyperthermia is related to the duration and intensity of application.[3,11,12] Maintaining a precise therapeutic temperature is critical, as a subtherapeutic elevation in temperature may actually promote neoplastic growth,[13] while excessive temperature elevation may result in the death of normal as well as tumor tissue. Temperatures in the range of 41.5°C to 45°C cause selective death of tumor cells compared with normal cells.[4] To reduce tumor mass, it is important to heat the tumor uniformly so that the lowest effective temperature is applied throughout the tumor for a defined period of time.

In continuing Phase II clinical trials at two St. Louis institutions, volumetric interstitial hyperthermia is being evaluated as a therapy for patients with recurrent malignant brain tumors. Volumetric interstitial hyperthermia involves the distribution of sufficient heat throughout a given tumor volume to maintain the minimum effective temperature to produce tissue

Table I
Characteristics of 59 Patients

Age Range	16-69 years
Sex	
Male	42 (71%)
Female	17 (29%)
Type	
Malignant Glioma (astrocytoma, glioblastoma)	49 (83%)
Metastatic	10 (17%)
Location	
Frontal	23 (39%)
Temporal	12 (20%)
Temporoparietal	5 (8.5%)
Frontal-Parietal	5 (8.5%)
Cerebellar	3 (5%)
Temporal-Parietal-Occipital	3 (5%)
Occipital	2 (3%)
Frontal-Temporal	2 (3%)
Parietal	1 (2%)
Parietal-Occipital	1 (2%)
Thalamus	1 (2%)
Hypothalamus	1 (2%)
Previous Therapy	
Craniotomy/Radiation	22 (37%)
Radiation Only	20 (34%)
Craniotomy/Radiation/Chemotherapy	7 (12%)
Craniotomy/Brachytherapy	4 (6%)
Radiation/Chemotherapy	2 (3%)
Radiation/Brachytherapy	1 (2%)
Chemotherapy Only	1 (2%)
Craniotomy/Radiation/Brachytherapy	1 (2%)
Craniotomy/Radiation/Brachytherapy/Chemotherapy	1 (2%)

damage.[14] This new technique for delivering hyperthermia therapy uses an array of interstitial catheters containing a custom heating element and thermistor. A computer control system calculates blood flow and adjusts the energy delivered to each heating catheter to maintain a consistent tumor tissue temperature.

Patients and Methods

Patients were eligible for inclusion in the study if they met the following criteria: (1) histologically verified tumor recurrence, (2) exhaustion of conventional therapy options, (3) age 15 or older.

To evaluate volumetric hyperthermia as a single modality, other treatments had to have been completed at least one month prior to beginning hyperthermia therapy. Competent mental status was required for informed consent. As the investigation proceeded to Phase II, patients were additionally required to have a functional status of 70 or better on the Karnofsky performance scale. The Karnofsky scale, used to measure a patient's physical independence, ranges from 0 (dead) to 100 (normal, no evidence of disease). The individual with a Karnofsky score of 70 is generally unable to work, but is able to function independently at home and care for himself with some assistance.[15]

From May 1985 through October 1988, there were 59 patients with recurrent intracranial malignancies admitted to St. Luke's Hospital, St. Louis, for volumetric interstitial hyperthermia treatment. Forty-two (71%) patients were male. Ages ranged from 16 to 69 years old. Table 1 shows a summary of tumor histology, location, and previous therapy.

Interstitial hyperthermia catheters were surgically implanted in the tumor using a CT-directed stereotactic technique with the patient under general anesthesia.[14,16] Hyperthermia was delivered according to a protocol of three treatment cycles, each separated by a period of four to six weeks. A cycle was defined as treatment delivered during one hospital admission. For each cycle, catheters were implanted in the brain tumor, hyperthermia delivered, and the catheters removed. The treatment was fractionated to deliver hyperthermia three out of every four hours, accumulating within each cycle a total of 72 hours of hyperthermia at 41.5°C to 45°C minimum tissue temperature.[14,16] Initially, tissue temperatures were monitored during the entire hour between heat applications. We found that temperatures returned to baseline measurements within the first minute following cessation of each fraction. Thereafter, tissue temperatures were monitored only for the first five minutes following each fraction. During the remainder of the prescribed hour between heat fractions, the patient could be disconnected from the heating-monitoring system.

Throughout treatment, the patients were housed in the neurosurgical intensive care unit for monitoring of vital signs, core body temperature, serum electrolytes, and neurological status. Most patients were awake and able to converse during the therapy. Pain was minimal and was related to the scalp penetration for catheter insertion. For follow-up, patients were evaluated by neurological examination and CT scans both with and without contrast every six to eight weeks. All patients were observed until their death. Survival time was analyzed from two starting points: time of CT diagnosis, and time of hyperthermia initiation. Because patients entered the study at various intervals after their tumors had progressed, it was felt that analysis from initiation of hyperthermia would provide more meaningful data. Survival was also calculated according to tumor type. In addition, we were able to match 37 of the patients who received interstitial hyperthermia with 37 patients in a control population who did not receive hyperthermia. Each patient was matched for the prognostic factors of age at diagnosis, sex, tumor type, and tumor location. Survival of the two groups was then compared.

Results

The 59 patients in this study underwent 138 hyperthermia catheter implantation procedures. A total of 1,883 catheters were placed, with delivery of 8,709 total hours of hyperthermia treatment.

Figure 1 shows survival for the group, according to primary versus metastatic tumors. Patients with primary tumors, the malignant gliomas (astrocytoma with anaplastic features and glioblastoma multiforme), were analyzed separately, but are shown combined because of similar results. This group survived from 4 to 539 weeks, with a median survival of 67 weeks or more, measured from diagnosis until death. Seven patients are still living. The median duration from diagnosis to tumor progression and initiation of hyperthermia was 35 weeks. From initiation of hyperthermia to death, the median survival was found to be 25 weeks or more, with 32% surviving beyond one year.

The survival for patients with metastatic lesions ranged from 7 to 76 weeks with a median of 45 weeks from diagnosis of the brain lesion to death. In these patients, the median duration from diagnosis to initiation of hyperthermia was 34 weeks. Survival following tumor progression and initiation of hyperthermia was a median 15 weeks.

The hyperthermia group was compared with the matched control group with regard to survival from the date of last conventional therapy to death, using the Kaplan-Meir Product Limit method. The control group, who received standard therapy without hyperthermia, achieved a 24-week median survival from the date of last conventional therapy. The group receiving interstitial hyperthermia evidenced a 43-week median survival from the date of last conventional therapy. These results demonstrated statistical significance at the 0.05 level of significance ($p < 0.035$), using the Wilcoxon test.

Tumor response was evaluated using contrast-enhanced serial CT scans. The follow-up scans, obtained at four to six weeks after completion of each cycle, demonstrated necrosis in the area of catheter placement and a reduction in inflammation (Fig 2). Arrest of tumor growth was seen in patients with previously growing tumors. This important response was also associated with improved patient activity.

Complications associated with the interstitial implantation of the heating catheters included hemorrhage and infection. Of the 138 implantation procedures, one major hemorrhage occurred at the time of catheter implantation and required craniotomy, and one major hemorrhage occurred at the time of catheter removal. Mild to moderate hemorrhage, which resolved without intervention, occurred in 22 of the 138 procedures. Scalp infections followed six implantations, and meningitis followed one.

Discussion

Typically, the prognosis for patients with malig-

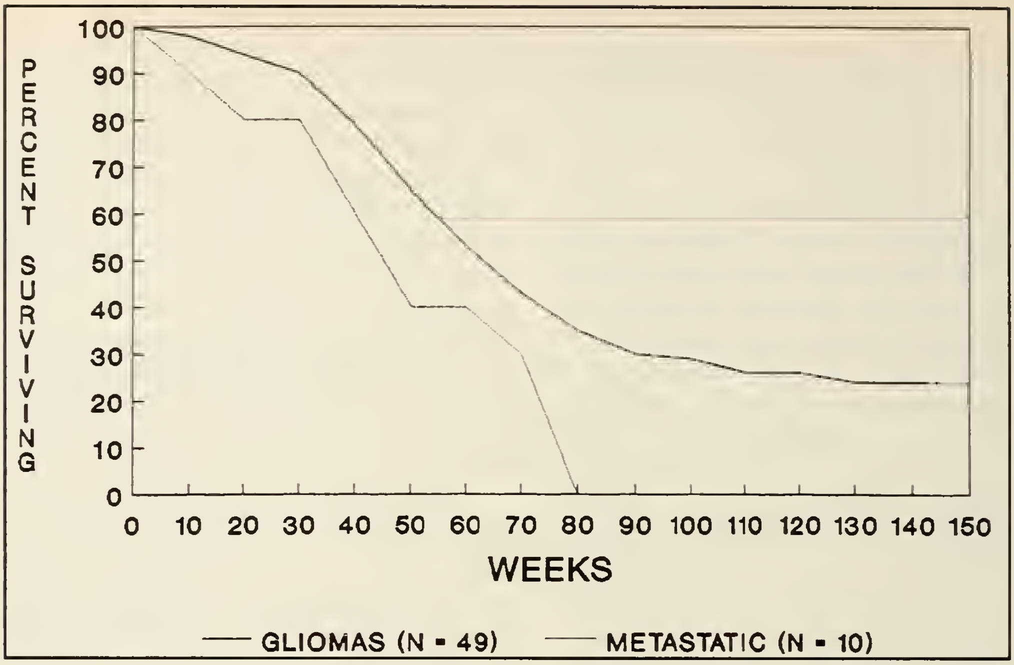

Fig 1. Survival measured from the time of diagnosis to death in patients receiving hyperthermia treatment. The range of survival for patients with primary tumors (n=49), was 4-538 weeks. The range for those with metastatic tumors (N=10), was 7-76 weeks.

nant intracranial tumors is dismal. The tumor's typical invasiveness in the surrounding normal parenchyma, rapid rate of growth, and advanced stage at diagnosis are major reasons for the poor prognosis and decline in functional ability.

The median survival from diagnosis to death of patients with glioblastoma multiforme (GBM) is a disappointing 43 weeks following exhaustive efforts at surgery, maximal external radiation, and systemic chemotherapy.[1] Two-year survival is achieved in only 10% of the patients. In this study, the median survival of 67 weeks for patients with GBM or malignant glioma represents an increase of 24 weeks over these figures. Continued research in hyperthermia and other treatments may extend the median and two-year survival figures.

Typically, patients with GBM present with neurologic deficits that may be global, related to increased intracranial pressure, or focal, related to specific tumor location. Although the patient's functional status may remain unchanged or deteriorate only slightly in the early course of the illness, most patients experience a decline in functional ability associated with tumor progression or recurrence. Unfortunately, there are little historical data on the rate of decline in Karnofsky performance scores related to tumor progression. Immediately following hyperthermia treatment, a slight decline in Karnofsky score was noted; however, recovery to near pretreatment functional levels usually occurred within four weeks. In some patients already in rapid decline, we did not observe recovery of functional status. The general trend in Karnofsky scores, however, was encouraging in this group.

The complications we observed were surgical risks inherent to interstitial implantation and other interventional procedures in the brain. Given the advanced stage of the disease and the poor prognosis for individuals with recurrent intracranial malignancies, the incidence of hemorrhage and infection, while not desirable, was considered acceptable.

This trial was conducted using hyperthermia as a sole modality. Along with technical feasibility, the study of long-term volumetric interstitial hyperthermia without concomitant therapy demonstrated reasonable patient tolerance.[14] Efficacy of the hyperthermia treatment was demonstrated by improved survival of patients who had extensive recurrent disease. We are now investigating the effectiveness of volumetric interstitial hyperthermia in newly diagnosed, untreated tumors in patients who are not in rapid decline from recurrent tumor.

Because of the promising results we have observed, we plan two additional protocols involving hyperthermia administered with other therapies. One will involve hyperthermia and external beam radiation; the other will involve hyperthermia and systemic chemotherapy. Continued research to determine efficacy, dosage, and timing of concurrent therapy is to follow.

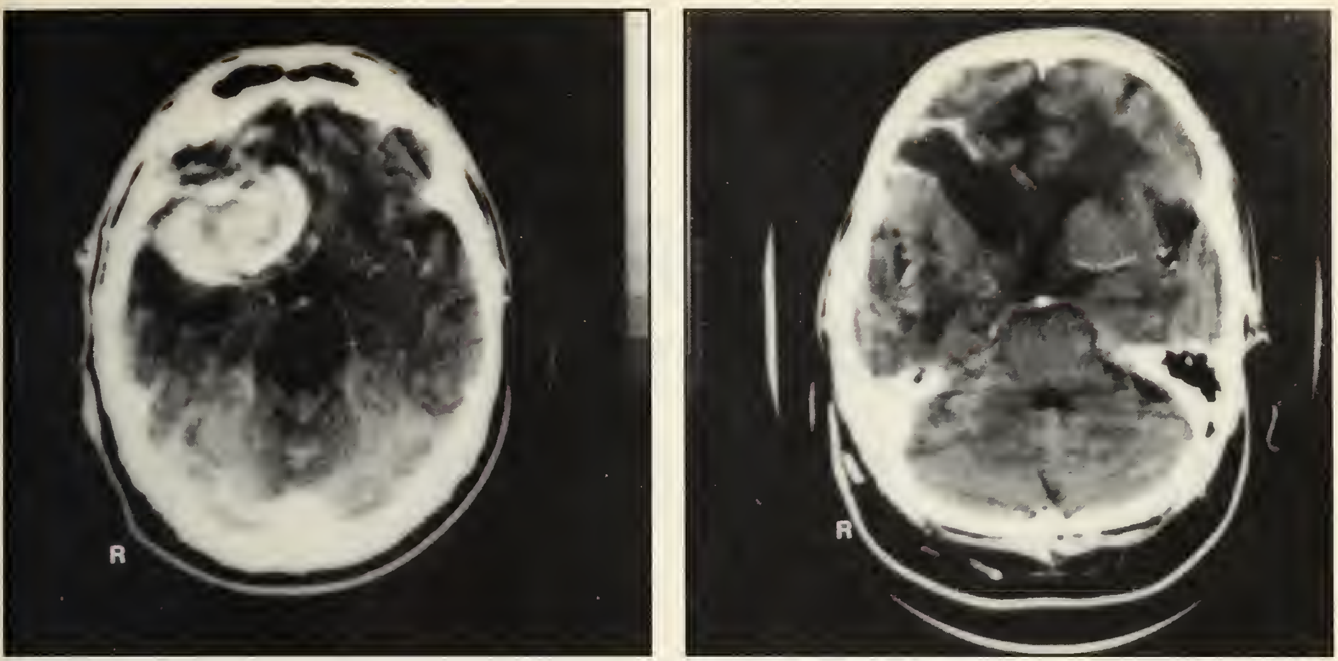

Fig 2a & 2b. Computed tomographic (CT) scans obtained immediately before initiation of hyperthermia (2a) and at 6 weeks follow-up (2b) on a 46-year-old man with a primary brain tumor (grade III glioma).

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The Authors

J. ALEXANDER MARCHOSKY, M.D.
CHRISTOPHER J. MORAN, M.D.
DEBORAH M. WELSH, R.N.

Dr. Marchosky is chief of the Department of Neurosurgery at Missouri Baptist Medical Center, St. Louis, Missouri, and is also in the Department of Neurosurgery at St. Luke's Hospital, St. Louis. Dr. Moran is from the Department of Radiology at the same hospitals. Ms. Welsh is the neuro-oncology coordinator at St. Luke's Hospital.

Reprints

J. Alexander Marchosky, M.D.
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Angioplasty of Persistent "Stump" of Internal Carotid Artery

Howard Smith, M.D., and John Oro, M.D.
Columbia, Missouri

An unusual sequela of internal carotid artery occlusion is the development of cerebral ischemia caused by emboli in a residual stump of the internal carotid artery. Five patients with transient ischemic attacks due to this condition are presented. Stump angioplasty was employed successfully in each case.

The evaluation of patients with transient ischemic attacks (TIA) occasionally reveals occlusion of the internal carotid artery (ICA). In some of these patients, the cause of symptoms may be ischemia due to a stenotic external carotid artery (ECA), which may respond to external carotid artery endarterectomy. In other cases, however, the cause may be emboli from a residual stump of the internal carotid artery. We present five patients with TIAs associated with a residual ICA stump. The surgical management and eventual outcomes of the patients are also discussed.

Patient Population

Five patients (Table 1) were referred to the neurosurgery service at the University of Missouri-Columbia Hospital and Clinics for evaluation of hemispheric transient ischemic attacks or amaurosis fugax. All were found to have an ipsilateral internal carotid artery (ICA) occlusion with a residual stump of the artery. The stumps measured between 5 mm and 25 mm. The angiograms were consistent with thrombus in two cases (Fig 1), but did not suggest thrombus in three cases (Fig 2). Four patients had suffered TIAs while on aspirin therapy (650 mg twice daily). The fifth patient had diabetic retinopathy, which was felt to be a contraindication to aspirin therapy.

Operative Technique

An incision was made along the anterior border of the sternocleidomastoid muscle and, following a subplatysmal dissection, the common carotid artery (CCA), the ECA and the ICA were sharply dissected (Fig 3a). Heparin, in a dose of 3500 to 5000 units, was given intravenously one minute before clamps were

Table 1
Patient Data

Pt. No.	Age	Sex	Symptoms	Signs	Angiography	Follow-up	Outcome
1	45	M	Episodic left hemiparesis	None	Right ICA stump 2.5 cm with thrombus	50 months	No further events
2	72	M	Episodic left hemiparesis	None	Right ICA stump 8 mm without thrombus	13 months	No further events
3	58	M	Dysarthria of sudden onset, episodic left upper extremity weakness, episodic R facial numbness	Left drift	Bilateral ICA stump 1 cm without thrombus	14 months	No further events
4	45	M	Transient aphasia	None	Left ICA stump 1 cm without thrombus	10 months	No further events
5	60	M	Episodic left hemiparesis	Right hemiparesis	Right ICA stump 1 cm with thrombus	5 months	No further events

positioned on the ECA above the palpable plaque and on the CCA below the bifurcation. The artery was incised at the base of the ICA and the lumen of the ECA was inspected (Fig 3b). If the plaque in the ECA was significant, a clamp was placed across the origin of the ICA and the artery was ligated and transected (Fig 3c). The CCA and ECA were opened, and the proximal ICA defect was repaired by continuous suture so as to obliterate the stump without compromising the lumen. If significant plaque was noted, the arteriotomy was extended into the ECA and an endarterectomy was performed (Fig 3c). The posterior aspect of the ICA was transected to form a flap that allowed for closure of the ECA arteriotomy (Fig 3d) and the ICA defect in a continuous fashion (Fig 3e).

Operative Results

Five patients with occluded ICAs and persistent stumps underwent stump angioplasty for symptoms suggestive of embolism. One of the patients underwent bilateral stump angioplasties one week apart. One of the five also underwent ECA endarterectomy at the time of stump angioplasty. No neurologic deficits were noted postoperatively. During a mean follow-up period of 18 months (ranging from 5 to 40 months), no patient reported either amaurosis fugax or TIAs.

Discussion

It was once generally believed that a patient who survived occlusion of an ICA was free from risk of embolic stroke, as there was no pathway for embolization.[1] However, the initial description of the stump syndrome[2] led to awareness that the stump of the occluded ICA can be a source of emboli, which traverse the ECA and enter the intracranial circulation through collateral vessels.

The external to internal carotid circulation has been well defined anatomically and angiographically.[3-5] The principal anterior collateral vessels are the external to ophthalmic system, the external to caroticotympanic system, and the external to meningeal system. Convincing angiograms, showing a clot arising in the stump of an occluded ICA and embolizing through the ECA, have been published.[6] Other explanations for TIAs in the patient with an occluded ICA would include embolization from the distal aspect of the internal carotid clot, and intermittent decreased blood

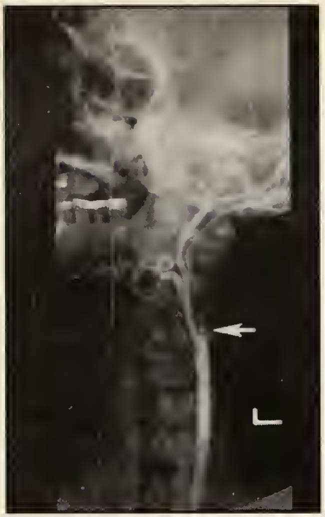

Fig 1. Example of angiogram suggesting thrombus in the lumen of the stump.

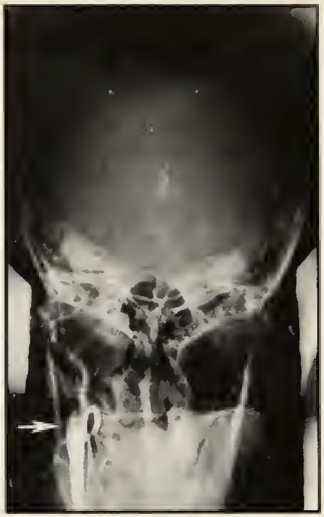

Fig 2. Example of angiogram revealing no thrombus in the stump.

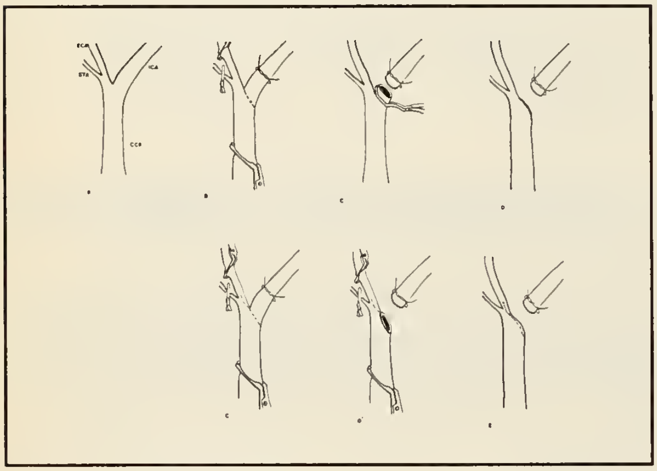

Fig 3. Operative Technique

flow, perhaps from cardiac arrhythmias. Our experience and that of others[2,7,8] suggest that stump angioplasty may benefit the patient with a persistent stump of an occluded internal carotid artery and TIAs who meets the following conditions:

1. The TIAs are in the distribution supplied by the external carotid artery collateral vessels on the side of the occluded internal carotid artery.

2. A persistent stump of the internal carotid artery of at least 5 mm, with or without clot, is seen on angiography.

3. The TIAs are refractory to aspirin therapy, or aspirin therapy is contraindicated.

4. Cardiac sources of emboli or cardiac arrhythmias resulting in reduced cardiac output have been ruled out.

5. There are no other medical conditions that prevent the patient from undergoing a major operation.

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The Authors

HOWARD SMITH, M.D.
JOHN ORO, M.D.

The authors are from the Division of Neurosurgery, University of Missouri Hospital and Clinics, Columbia, Missouri.

Reprints

Howard Smith, M.D.
Division of Neurological Surgery
N 522 University of Missouri Health Sciences Center
1 Hospital Drive
Columbia, Missouri 65212

SPECIAL ARTICLE

Risks of Viral Transmission by Blood Products: Current Status of Preventive Measures

Hugh Chaplin, Jr., M.D., and Ricardo Ramos, M.D.
St. Louis, Missouri

Patients are likely to ask their physicians about the safety of blood transfusions in the present era of AIDS fear. The authors address these concerns and discuss the risks of acquiring viral disease from a transfusion.

Increased emphasis upon autologous transfusion, along with a modest decline in the overall use of heterologous donor blood products nationally, attest to increased awareness and concern about the potential viral infectivity of transfused blood. While the public mood — bordering on hysteria at times — is based primarily on fear of acquiring AIDS from transfusion, the more common infectious risk is hepatitis (principally Non-A, Non-B hepatitis — now known as hepatitis C). This report summarizes current knowledge about the most common viral diseases transmissible by blood, along with generalizations about relative risks, and a description of measures commonly used to minimize those risks.

Table 1 summarizes information for the 14 most commonly transfused blood products. The capability of individual products — which have *not* undergone specific virus inactivation treatment — to transmit infection is shown for six viruses of special concern in transfusion practice (Hep-B, NANB, HIV, HTLV-I, EBV and CMV). The blood products are subdivided into those derived from a single donor (or dispensed as pools of not more than six to 12 different donations), and components derived from multiple donor (thousands) plasma pools. Three of the viruses are transmitted exclusively (EBV, CMV) or primarily (HTLV-I) by transfused leukocytes, and therefore do not constitute an infectious risk with respect to transfusion of plasma or products derived from plasma. Whether plasma and its derivatives are capable of transmitting HTLV-I has not yet been shown conclusively, but is considered very unlikely.

Measures taken to reduce or eliminate transfusion-transmitted viruses are summarized in Table 2. Most of the items are self-explanatory. While there has been a decrease in transfusion-associated Hep-B and NANB hepatitis in recent years, it is not clear that this is primarily the result of surrogate testing (item 4). Voluntary self-exclusion (item 2), and exclusion of blood testing positive for HIV infection have surely been important contributing factors. Physical and chemical measures to inactivate viruses (items 5-7)

Table 1
Selected Virus Infectivity of Commonly Used Blood Products

Source All products below are obained from volunteer, self-included donors with negative serologic screens and acceptable surrogate test results	**Without Virus Inactivation Capable of Transmitting**			**Virus Inactivation Treatment**	**Estimated Risk of Infection by Transfusion of Screenec and Virus "Inactivated" Blood Products**			
					>3 units		Single Units	
	Hep-B NANB HIV	HTLV-I[d]	EBV[e] CMV[e]		Hep-B	NANB	HIV	HTLV-I
Single Donor Products								
Whole blood	+	+	+	None	1/500-[h] 1/1000	1/50-[h] 1/100	1/40,000- 1/250,000	?1/40,000-[i] 1/250,000
Red blood cells	+	+	+	None	"	"	"	"
Single donor platelets (apheresis)	+	+	+	None.	"	"	"	"
(Single donor granulocytes)[a]	+	+	+	None	"	"	"	"
Fresh frozen plasma	+	(?)[d]	---	None	"	"	"	"
Plasma-frozen within 24 hours	+	(?)[d]	---	None	"	"	"	"
Random donor platelets (pool of 6 donors)	+	+	+	None	---------------several times the above------------------			
Cryoprecipitate (pool of 8-12 donors)	+	(?)[d]	---	None	---------------several times the above------------------			
Purified from Multiple Donor Plasma Pools (thousands)								
Human serum albumin	+	(?)[d]	---	heat-60°C. 10h	0	0	0	0
I-M IgG[b]	---	(?)[d]	---	None[f]	0	0	0	0
I-V IgG[c]	---	(?)[d]	---	None[f]	0	0	0	0
Factor VIII concentrates	+	(?)[d]	---	heat[g]	low	v.v. low	v.v. low	v.v.low
Monoclate Factor VIII	+	(?)[d]	---	affin purific + heat[g]	low	v.v. low	v.v. low	v.v.low
Factor IX Complex	+	(?)[d]	---	heat[g]	low	v.v. low	v.v. low	v.v.low

[a] Rarely Prescribed
[b] I-M = intramuscular
[c] I-V = intravenous
[d] HTLV-I is primarily intralymphocytic. Transmission by plasma is considered very unlikely.
[e] Transmissible only by infected WBC
[f] See Table 2, item 6
[g] See text re: variable conditions
[h] Assuming a 2-4% overall (B+NANB) national incidence of transfusion-associated hepatitis per ≥ 3 units transfused
[i] Rough estimate. Without screening, 1/7,000 units would be infected. With current screening, the number is probably in the range for HIV.

Table 2

Measures Taken to Reduce or Eliminate Transfusion Transmissible Viruses

1) Requiring a volunteer (vs paid) donor blood supply. This has been the single most effective measure.
2) Volunteer self exclusion — i.e. persuading individuals who know they are in "high risk groups," especially for HIV or hepatitis, not to donate blood (or if they do donate due to peer pressure — to indicate confidentially to the collection agency that their blood should not be used for transfusion). This measure has been quite effective among the homosexual population, but relatively ineffective among IV drug users.
3) Screening all blood for the presence of hepatitis B surface antigen (early 1970s) and for antibodies to HIV (since April 1985) and HTLV-I (since early 1989).
4) Use of surrogate screening tests to reduce the likelihood that a donor carries the infectious agent(s) for NANB hepatitis. Deferral of donors having alanine amino transferase (ALT) values and hepatitis B core antibody levels above agreed-upon cutoff points is estimated to have reduced transfusion-transmitted NANB hepatitis by at least 50%.
5) Viral inactivation treatment of blood products, particularly those derived from plasma pooled from a large number of donors (often greater than 10,000). Most methods in current use in the United States rely on heat applied to products either in the dry or wet (partially or totally in solution) state under normal or increased pressure. The temperature, pressure and duration of heating are determined by the functional stability of the individual plasma components.
6) Fractionation purification — the prime example is the Cohn/Oncley multiple cold-acid-ethanol precipitations employed to prepare human gamma globulin products and to provide the starting material for production of human serum albumin. Viruses are thought to be killed or eliminated during the multi-step preparative procedure.
7) Additional measures currently under study include: gamma irradiation, ultraviolet irradiation (alone or in the presence of chemical additives), addition of solvents, detergents, affinity purification (with virus removal by extensive washing before elution of the plasma component), and laser irradiation in the presence of a non-toxic dye additive.
8) Development of recombinant DNA methods for production of individual, functional, virus-free plasma components.
9) Virus inactivation for cellular products — especially RBCs — presents formidable problems. Although under intensive study, no effective and acceptable methods are currently available.

have been constrained by the necessity of maintaining the chemical and functional integrity of the blood components, without generation or introduction of toxic substances. To date, heat is the principal modality employed — applied to products in the dry or wet state, under normal or increased pressure — as shown in the next-to-last section of Table 1. Pasteurization (60°C for 10 hours) is uniformly successful for serum albumin. Different manufacturers employ different heating protocols for the coagulation factor concentrates; conditions are pushed to the limits of acceptable loss of functional activity in an effort to maximize virus inactivation. It is notable that *none of the single donor products* — which constitute the vast majority of transfused products — *are subjected to any form of virus inactivation treatment.*

Finally, the section on the right of Table 1 provides selected estimates of the risks of infection following transfusion of screened and "virus inactivated" blood products — for the four viruses of greatest general clinical concern at the present time (Hep-B, NANB, HIV, HTLV-I). The values shown for

Hep-B and NANB in the top line are "estimates," extrapolated in part from studies performed on recipients prior to 1981. It should be noted that the estimates for acquiring hepatitis are for patients receiving three or more than 3 *blood products*, the only group for which data were available in the pre-1981 studies. Clearly, risks would be lower for patients receiving only one or two products. Because these very difficult early studies have not been repeated, and because donor selection and screening procedures have undergone significant recent modifications (items 2-4, Table 2), the risk figures given for Hep-B and NANB are somewhat speculative, and are not agreed upon universally. A compounding problem is marked variation in the prevalence of Hep-B and NANB in different geographic areas (e.g. 4 times higher in Houston, Texas than in St. Louis, Mo). The figures represent close approximations of estimates by two national authorities, obtained by personal communication specifically for preparation of this report. Several-fold increased risks may be expected for products pooled from six to 12 donors (random donor platelets, cryoprecipitate). The "low" and "v.v. low" designations for "virus inactivated" clotting factor concentrates cannot be expressed more quantitatively. The products have been available for too short a time, inactivation procedures for different products vary in different ways, and their *in vivo* use in suitable "naive" recipients (i.e. never previously transfused) has been too limited to provide definitive risk data. Clearly, the treated products have *greatly reduced infectivity*, but scattered reports of hepatitis and HIV in recipients indicate that total viral inactivation has not always been achieved.

New information in this rapidly growing field is coming in almost daily, and will be the subject of another report as soon as significant advances are confirmed. In the meantime, this report serves as a reminder that despite improved donor screening and product-processing, transfusions carry significant risks. Transfusions should be given only when absolutely necessary, and autotransfusion should be used whenever possible.

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The Authors

HUGH CHAPLIN, JR., M.D.
RICARDO RAMOS, M.D.

Dr. Chaplin is director of the Barnes Hospital Blood Bank, Division of Laboratory Medicine and a professor of medicine and pathology at Washington University School of Medicine in St. Louis, Missouri. Dr. Ramos is a third year resident in the Division of Laboratory Medicine.

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Reprints

Hugh Chaplin, Jr., M.D.
Departments of Pathology and Internal Medicine
Washington University School of Medicine
P.O. Box 8118
660 S. Euclid Avenue
St. Louis, Missouri 63110

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January

5 - 6 **Lung Cancer** — Location: University of Missouri-Columbia School of Medicine, Columbia, MO. Contact: Barry Kling, Office of Continuing Education, MA215 Health Sciences Center, MU School of Medicine, Columbia, MO 65212. 314/882-4105.

9 - 11 **Introduction to Doppler Echocardiography** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: Anita Herbst, St. Louis University School of Medicine, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8167.

12 **Clinical Conference in Otolaryngology: Treatment of Cutaneous Malignancies** — Location: St. Louis University Learning Resources Center, St. Louis, MO. Contact: Anita Herbst, St. Louis University School of Medicine, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8167.

17 **AIDS: Treatment of the Disease and Associated Infections** — Location: Jewish Hospital, St. Louis, MO. Contact: Alan P. Lyss, M.D., Jewish Hospital, 216 E. Kingshighway, P.O. Box 14109, St. Louis, MO 63178. 314/454-7000.

18 **Office Treatment of Common Cardiovascular Problems** — Location: Hyatt Regency Hotel at Union Station, St. Louis, MO. Contact: Anita Herbst, St. Louis University School of Medicine, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8167.

19 - 21 **Advanced Trauma Life Support Instructor/Provider Course** — Location: St. Louis University Learning Resources Center, St. Louis, MO. Contact: Mary Keegan, St. Louis University School of Medicine, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8365.

20 **Ellis Fischel Tumor Board: Clinical Applications of Flow Cytometry as a Prognostic Tool in Solid Tumors** — Location: Ellis Fischel State Cancer Center, Columbia, MO. Contact: Jack Wax, Program Development, Ellis Fischel State Cancer Center, 115 Business Loop 70 West, Columbia, MO 65203. 1-800-392-2545, ext. 250.

22 - 24 NIH **Consensus Development Conference: Noise and Hearing Loss** — Location: Masur Auditorium, National Institutes of Health, Bethesda, MD. Contact: William H. Hall, Office of Medical Applications, National Institutes of Health, Bethesda, MD 20892. 301/496-1143.

22 - 26 **Medicolegal Death Investigator Training Course** — Location: St. Louis University Learning Resources Center, St. Louis, MO. Contact: Mary Fran Ernst, St. Louis University School of Medicine, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/725-1884.

February

1 - April 1 **31st Annual Postgraduate Institute For Pathologists in Clinical Cytopathology - Home Study Course A** — Location: Home Study Course offered by Johns Hopkins University School of Medicine, Baltimore, MD. Contact: John K. Frost, M.D., or Ms. Betty Ann Remley, 111 Pathology Bldg., Johns Hopkins Hospital, Baltimore, MD 21205. 301/955-8594.

6 - 8 **Introduction to Doppler Echocardiography** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: Anita Herbst, St. Louis University School of Medicine, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8167.

8 - 10 **10th Annual Conference on Peritoneal Dialysis** — Location: Loews Anatole Hotel, Dallas, Texas. Contact: Barry Kling, MU School of Medicine, Office of Continuing Education, MA215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

9 **Pediatrics: Neonatology** — Location: Research Medical Center, Kansas City, MO. Contact: Michelle J. Macek, R.N., The Ed Bixby Institute for Postgraduate Medical Education, Research Medical Center, 2316 E. Meyer Blvd., Kansas City, MO 64132. 1-816/276-4306.

10 - 11 **AIDS Update** — Location: Holiday Inn Westport, St. Louis, MO. Contact: Marilyn Porter, Metropolitan Medical Center Educational Institute, 530 Des Peres Road, Des Peres, MO 63131. 1-800-888-METRO

14 **Prostate Cancer** — Location: Jewish Hospital, St. Louis, MO. Contact: Alan P. Lyss, M.D., Jewish Hospital, 216 S. Kingshighway, P.O. Box 14109, St. Louis, MO 63178. 314/454-7000.

16 **Clinical Conference in Otolaryngology: Contemporary Laser Surgery** — Location: St. John's Mercy Medical Center, von Gontard Conference Center, St. Louis, MO. Contact: Anita Herbst, St. Louis University School of Medicine, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8167.

21 - 23 **Advanced Cardiac Life Support Provider Course** — Location: St. Louis University Learning Resources Center, St. Louis, MO. Contact: Anita Herbst, St. Louis University School of Medicine, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8167.

23 - 25 **Current Clinical Applications of Cardiac Ultrasound** — Location: Vail, Colorado (location pending). Contact: Anita Herbst, St. Louis University School of Medicine, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8167.

28 **Update in Surgery: The Joseph E. Flynn Lecture** — Location: von Gontard Conference Center, St. John's Mercy Medical Center, St. Louis, MO. Contact: Judith L. O'Guin, St. John's Mercy Medical Center, 615 South New Ballas Road, St. Louis, MO 63141. 314/569-6290.

March

2 **Concepts of Supportive Cancer Care** — Location: St. Luke's Hospital Institute for Health Education, St. Louis, MO. Contact: Laura Klaus, Director of Professional Education, American Cancer Society, 1280 Research Blvd., St. Louis, MO 63132. 314/567-9730 or 1-800-727-0395.

2 **Preceptors Day** — Location: School of Medicine, Columbia, MO. Contact: Barry Kling, MU School of Medicine, Office of Continuing Education, MA215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

2 - 4 **Organizational Systems** — Location: University of Missouri, Columbia, MO. Contact: Barry Kling, MU School of Medicine, Office of Continuing Education, MA215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

3 - 4 **Family Practice Update** — Location: School of Medicine, Columbia, MO. Contact: Barry Kling, MU School of Medicine, Office of Continuing Education, MA215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

5 - May 21 **16th Annual Internal Medicine Review** — Location: The Jewish Hospital, Washington University Medical Center, St. Louis, MO. Contact: Cathy Caruso, Continuing Medical Education, Washington University School of Medicine, Box 8063, 660 South Euclid, St. Louis, MO 63110. 314/362-6893.

8 **Tobacco Conference 1990: A Forum for Professionals** — Location: Capitol Plaza Hotel, Jefferson City, MO. Contact: Monica H. Eischen, Missouri Department of Health, Division of Chronic Disease Prevention and Health Promotion, 201 Business Loop 70 West, Columbia, MO 65203. 314/875-2218.

12 - 13 **Critical Care Update** — Location: Holiday Inn Executive Center, Columbia, MO. Contact: Barry Kling, Office of Continuing Education, MA215 Health Sciences Center, MU School of Medicine, Columbia, MO 65212. 314/882-4105.

14 **Update in Cardiology** — Location: von Gontard Conference Center, St. John's Mercy Medical Center, St. Louis, MO. Contact: Cathy Lawton, St. John's Mercy Medical Center, 615 South New Ballas Road, St. Louis, MO 63141. 314/569-6930

16 **Clinical Conference in Otolaryngology: Update in Neurotology** — Location: St. Louis University Learning Resources Center, St. Louis University Medical Center, 1402 S. Grand Blvd., St. Louis, MO 63104-1083. 314/577-8167.

16 **Eighth Annual Symposium on Geriatric Medicine** — Location: Breckenridge Inn Frontenac, St. Louis, MO. Contact: Anita Herbst, St. Louis University School of Medicine, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8167.

21 **Cancer of Unknown Primary Site** — Location: Jewish Hospital, St. Louis, MO. Contact: Alan P. Lyss, M.D., Jewish Hospital, 216 S. Kingshighway, P.O. Box 14109, St. Louis, MO 63178. 314/454-7000.

23 - 24 **Advanced Trauma Life Support Provider Course** — Location: St. Louis University Learning Resources Center, St. Louis, MO. Contact: Mary Keegan, St. Louis University School of Medicine, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8365.

April

3 - 5 **Introduction to Doppler Echocardiography** – Location: St. Louis University Medical Center, St. Louis, MO. Contact: Anita Herbst, St. Louis University School of Medicine, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8167.

5 - 6 **17th Annual Symposium on Obstetrics & Gynecology** – Location: Washington University Medical Center, St. Louis, MO. Contact: Cathy Caruso, Continuing Medical Education, Washington University School of Medicine, Box 8063, 660 South Euclid, St. Louis, MO 63110. 314/362-6893.

6 - 8 **Microsurgery of the Lumbar and Cervical Spine** – Location: St. Louis University Medical Center, St. Louis, MO. Contact: Anita Herbst, St. Louis University School of Medicine, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8167.

18 **New Imaging Modalities in Cancer Diagnosis** – Location: Jewish Hospital, St. Louis, MO. Contact: Alan P. Lyss, M.D., Jewish Hospital, 216 E. Kingshighway, P.O. Box 14109, St. Louis, MO 63178. 314/454-7000.

19 - 20 **The 21st Annual Matt Weis Symposium in OB/GYN** – Location: Breckenridge Frontenac Hotel, St. Louis, MO. Contact: Sandra Williams, St. John's Mercy Medical Center, 615 South New Ballas Road, St. Louis, MO 63141. 314/569-6880.

21 **New Directions in Cardiology: Update in Invasive & Non-Invasive Therapies** – Location: Hyatt Regency Hotel at Union Station, St. Louis, MO. Contact: Anita Herbst, St. Louis University School of Medicine, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8167.

23 - 27 **Medicolegal Death Investigator Training Course** – Location: St. Louis University Learning Resources Center, St. Louis, MO. Contact: Anita Herbst, St. Louis University School of Medicine, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8167.

23 - May 4 **31st Annual Postgraduate Institute for Pathologists in Clinical Cytopathology –In-Residency Course B** – Location: Johns Hopkins Medical Institutions, Baltimore, MD. Contact: John K. Frost, M.D., or Ms. Betty Ann Remley, 111 Pathology Bldg., The Johns Hopkins Hospital, Baltimore, MD 21205. 301/955-8594.

May

3 - 5 **Cardiovascular Medicine Legal Environment: Medicine's Response** – Location: Don CeSar Beach Resort, St. Petersburg, Florida. Contact: Anita Herbst, St. Louis University School of Medicine, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8167.

8 - 10 **Introduction to Doppler Echocardiography** – Location: St. Louis University Medical Center, St. Louis, MO. Contact: Anita Herbst, St. Louis University School of Medicine, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8167.

16 **Hematopoietins, Biologics, and Marrow Transplantation in the Treatment of Common Solid Tumors** – Location: Jewish Hospital, St. Louis, MO. Contact: Alan P. Lyss, M.D., Jewish Hospital, 216 S. Kingshighway, P.O. Box 14109, St. Louis, MO 63178. 314/454-7000.

27 - 31 **19th Annual Scientific Assembly - American College of Emergency Physicians State Chapter of California** – Location: Silverado Country Club, Napa, CA. Contact: CAL/ACEP office, 505 N. Sepulveda Blvd., Suite 12, Manhattan Beach, CA 90266. 213/374-4039 or 1-800-SEK-ACEP.

June

1 - 2 **3rd Annual Contact Lens Course** – Location: Washington University Medical Center, St. Louis, MO. Contact: Cathy Caruso, Continuing Medical Education, Washington University School of Medicine, Box 8063, 660 S. Euclid, St. Louis, MO 63110. 314/362-6893.

1 - 3 **The Big Four: Obesity, Diabetes Mellitus, Hypertension, Hyperlipidemia** – Location: Holiday Inn Executive Center, Columbia, MO. Contact: Barry Kling, MU School of Medicine, Office of Continuing Education, MA215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

6 - 10 **7th Annual Meeting of the Southern Orthopaedic Association** – Location: Hyatt Regency Hotel, Maui, Hawaii. Contact: Jeanette Stone, Southern Orthopaedic Association, 35 Lakeshore Drive, P.O. Box 190088, Birmingham, AL 35219-0088. 205/945-1848.

June

7 - 9 **Frontiers in Endosurgery: Flexible Endoscopy, Laser Surgery, and Endourological Techniques** — Location: Washington University Medical Center, St. Louis, MO. Contact: Cathy Caruso, Continuing Medical Education, Washington University School of Medicine, Box 8063, 660 S. Euclid, St. Louis, MO 63110. 314/362-6893.

8 - 9 **Primary Pediatrics** — Location: Holiday Inn Executive Center, Columbia, MO. Contact: Barry Kling, MU School of Medicine, Office of Continuing Education, MA215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

20 **Ovarian Cancer** — Location: Jewish Hospital, St. Louis, MO. Contact: Alan P. Lyss, M.D., Jewish Hospital, 216 S. Kingshighway, P.O. Box 14109, St. Louis, MO 63178. 314/454-7000.

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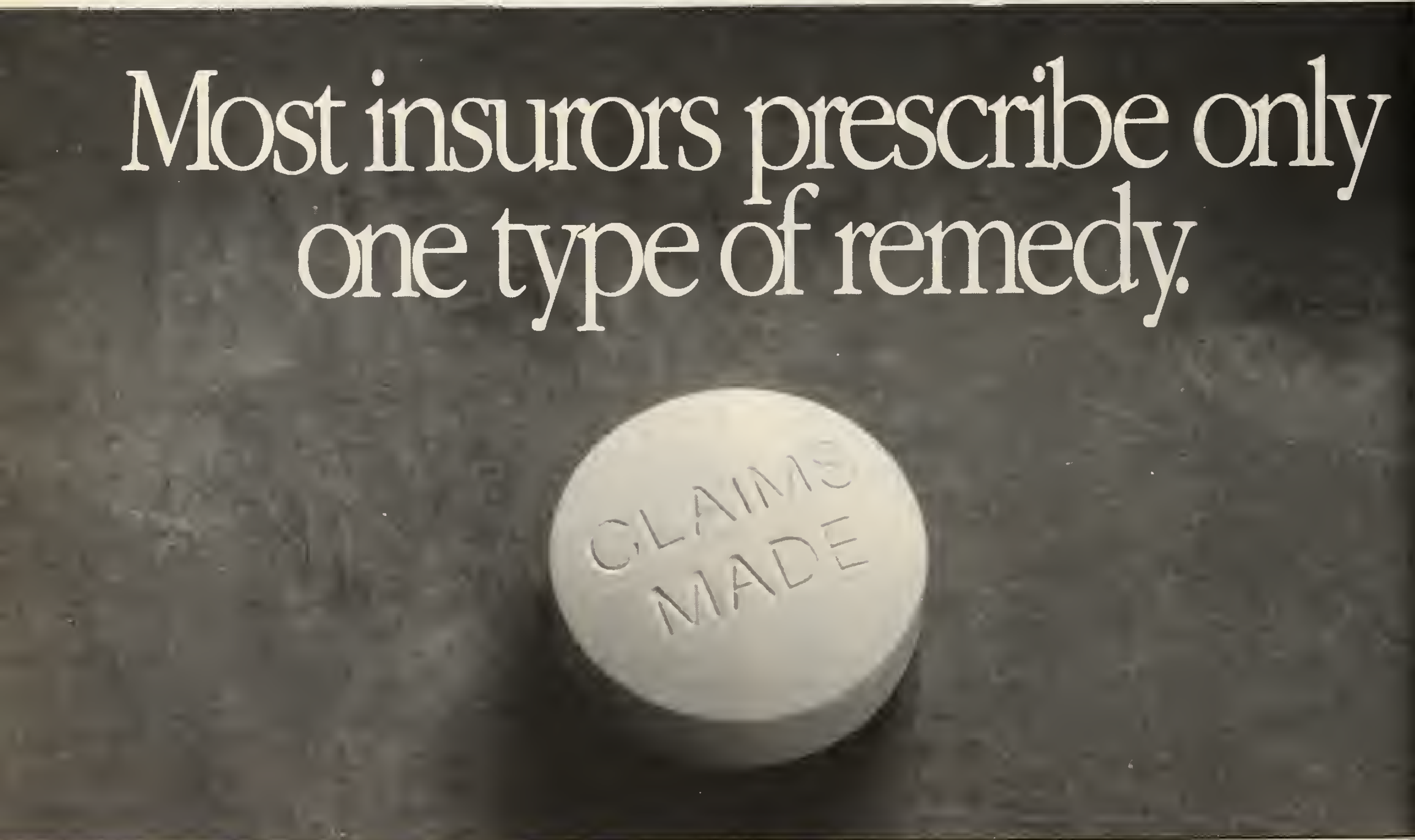

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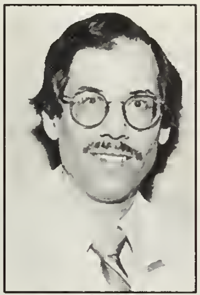
Medical School News

St. Louis University

■ A three-year study conducted at St. Louis University Medical Center confirms that exposure to low levels of carbon monoxide have a significant effect on people suffering from coronary artery disease (CAD), decreasing their ability to perform routine exercise activities.

The report, published in the November 23 issue of *The New England Journal of Medicine,* will be used to help redefine the current National Ambient Air Quality Standards (NAAQS) set by the Environmental Protection Agency.

Dr. Dahms


Dr. Chaitman

Thomas E. Dahms, Ph.D., associate research professor of anesthesiology and internal medicine, and **Bernard R. Chaitman, M.D.,** professor of internal medicine and director of the division of cardiology, St. Louis University School of Medicine, worked on the study in conjunction with researchers from three other institutions.

■ **Marilyn F.M. Johnston, M.D., Ph.D.,** associate professor of pathology, St. Louis University School of Medicine, and director of the blood bank-transfusion service, St. Louis University Hospital, has been awarded two grants totalling $62,448 by the R.W. Johnson Pharmaceutical Research Institute. One grant will be used to determine whether a specific hormone can positively affect autologous blood donations in patients with low red blood cell levels. The other will determine the optimum dosage of the hormone necessary to facilitate autologous blood donations.

■ **George C. Kaiser, M.D.,** a St. Louis University physician who throughout his career has been known for his support for the nursing profession, has been honored with a lasting tribute. *The George C. Kaiser, M.D., Nursing Education Fund* was officially recognized during a reception in November at St. Louis University Hospital.

Dr. Kaiser serves as professor of surgery and chief of the cardiothoracic surgery division for St. Louis University School of Medicine. The fund, established by a generous donation through the department of surgery, will support continuing education programs for nurses at St. Louis University Medical Center.

■ **C. Alec Pollard, Ph.D.,** associate professor of psychiatry and human behavior and director of the anxiety disorders center, division of behavioral medicine, St. Louis University School of Medicine, made several presentations at the annual convention of the Association for Advancement of Behavior Therapy in Washington, D.C. in November. In addition to presenting a research paper, "Panic Cognitions and Agoraphobia," and chairing a symposium, Dr. Pollard moderated a panel discussion of some of the nation's experts in anxiety disorders.

■ **Jeffrey D. Gfeller, Ph.D.,** instructor and clinical director of the neuropsychology laboratory in the department of psychiatric and human behavior's division of behavioral medicine, St. Louis University School of Medicine, presented a research paper, "Use of Hypnosis in the Treatment of Benign Pain," at the convention of the Society of Clinical and Experimental Hypnosis in November in St. Louis. In the presentation, Dr. Gfeller described a number of factors that can be used to facilitate a reduction in the level of discomfort with the chronic pain patient.

■ A unique procedure to treat previously inoperable brain tumors is now being offered at St. Louis University Medical Center. The procedure, called stereotactic radiosurgery, utilizes radiation rather than conventional surgical techniques to treat the tumors.

Richard Bucholz, M.D., assistant professor of neurosurgery, St. Louis University School of Medicine, **Tapan Roy, M.D.,** assistant professor and director of radiation oncology, **Sain Ahuja, Ph.D.,** chief physicist, and **Jan Dyer, R.T.T.,** chief technologist, jointly operate the delicate equipment. St. Louis University Hospital is one of 10 centers across the country and one of only two institutions in the St. Louis area to offer this type of nonsurgical treatment for brain tumors.

University of Missouri-Kansas City

■ A number of UMKC faculty members made presentations at the fall meeting of the Association of American Medical Colleges (AAMC) in Washington, D.C. **Louis Arnold, Ph.D.,** professor and director of the Office of Medical Education, was organizer and moderator for a session on "Evaluating Students on a Clinical Clerkship: Current Practices and Future Needs." **Loretta Loftus, M.D.,** assistant dean for Evaluation, was a panelist. Dr. Arnold also moderated a session on combined B.A.-M.D. Degree Programs, for which **Katherine Smith, M.D.,** associate dean for Selection, spoke on the UMKC Admissions process. **Virginia Calkins,** assistant professor emeritus, was moderator and discussant for "Gender-Related Issues in Career Choice and Humanistic Concerns." In addition, poster presentations were made by **Reaner G. Shannon, Ph.D.,** and **Virginia Calkins; Francoise King;** and **John Chamberlin, M.D.,** senior student **Carrie Beth Grimes, Julia Duckwall, Ph.D.,** and **Louise Arnold, Ph.D.**

■ **Richard L. Sutton, Jr., M.D.,** adjunct professor of medicine, ophthalmology, and geosciences, has been named a master in dermatology for 1989 by the American Academy of Dermatology. The award is given in recognition of his significant contributions to dermatology during a career as a clinician, teacher and author. Dr. Sutton is the twelfth dermatologist in the Academy's history to receive this honor. After a degenerative eye disease forced him to close his dermatology practice after 44 years, Dr. Sutton become co-founder in 1981 of the Low Vision Center at Truman Medical Center. Dr. Sutton's portrait was presented during the American Academy of Dermatology's annual meeting in San Francisco in December, by the awards sponsor, Janssen Pharmaceutica, Inc.

■ **Stephen Gordon, D.O.**, clinical assistant professor of obstetrics/gynecology, was recently elected vice chairman of the Missouri Section of the American College of Obstetricians and Gynecologists (ACOG). His three-year term began in November 1989. For the past three years, Dr. Gordon has been secretary-treasurer of ACOG's Missouri Section.

■ **Paul Williams, M.D.**, professor and chairman of the Department of Community Medicine and Family Practice presented "The Family Physician: Caring for the Patient Undergoing Cancer Therapy," in September at the American Academy of Family Physicians meeting in Los Angeles.

■ **Larry Dall, M.D.**, associate professor, in October made a presentation, "The Kansas City AIDS Research Consortium" before the American Foundation for AIDS Research in New York City.

■ **Jim Stanford, M.D.**, assistant professor, in November presented "Nosocomial Infections, A Symposium" at the Southwest Clinical Society Annual Fall Meeting in Kansas City.

■ **Frank K. Slovick, M.D.**, clinical assistant professor, **David Bamberger, M.D.**, assistant professor, and **Karl Stark, M.D.**, assistant professor, are coauthors of "Spontaneous Clostridial Myonecrosis in a Man with Drug-Induced Agranulocytosis," which appeared in the October 1989 issue of *Southern Medical Journal.*

■ **David Bamberger, M.D.**, assistant professor, in October presented "Bactericidal Function of Neutrophils from Rabbits with Acute and Chronic Experimental Abscess," at the Society for Leukocyte Biology in Marco Island, Florida.

■ **Luz S. Racela, M.D.**, clinical associate professor, **and Antonio S. Racela, Jr., M.D.**, clinical assistant professor, co-authored the abstract of "Human Papilloma Virus Effect in Male Partners of Women with Genital Condyloma," which appeared in the October 1989 issue of the American Journal of Clinical Pathology.

Washington University

■ **Ralph G. Dacey, Jr., M.D.**, has been named professor and head of Neurological Surgery and co-head of the Department of Neurology and Neurological Surgery at Washington University School of Medicine in St. Louis.

Dacey's appointment was effective November 20 and was announced by Washington University Chancellor **William H. Danforth, M.D.** Dacey will replace **Sidney Goldring, M.D.**, who has headed the department since 1974. Goldring, who specializes in the surgical treatment of epilepsy, is retiring from administrative duties as department head and will concentrate fulltime on patient care and research activities.

Dacey comes to Washington University from the University of North Carolina at Chapel Hill, where he has been professor and chief of the division of neurological surgery since 1987.

University of Missouri-Columbia

■ The Missouri Arthritis Program, part of the state Department of Health, was recognized as an innovative and outstanding model recently at at national meeting of the Centers for Disease Control in San Diego. Through his leadership of the Missouri Arthritis Advisory Board, **Gordon Sharp, M.D.**, professor and director of immunology and rheumatology, helps promote the program's eight regional arthritis centers, including one at MU. The program's coordinator, **Marsha Dubbert, R.N.**, was a speaker at the CDC meeting.

■ MU's Cosmopolitan International Diabetes Center recently honored **Stan and Lois Stafford** of Columbia for their support in establishing an endowed professorship for the center. A number of Cosmopolitans and friends of the couple turned out for a reception highlighted by the unveiling of a plaque with the Staffords' likenesses. **Thomas W. Burns, M.D.**, professor and chief of endocrinology and director of the center, was named the first Stafford Distinguished Professor of Medicine-Diabetes last year.

■ The American Psychological Association elected **Theodore F. Henrichs, Ph.D.**, to initial fellow status at its 97th annual convention recently in New Orleans. Henrichs is professor and chief of medical psychology in MU's department of psychiatry.

The honor recognizes his substantial contributions to the discipline. An expert on the Minnesota Multiphasic Personality Inventory, Henrichs is the author of a number of articles and book chapters concerning that inventory and other aspects of psychological assessment. He has been a member of the School of Medicine faculty since 1962.

■ **Philip C. Anderson, M.D.**, professor and director of dermatology, attended the centennial meeting of the American Association of Medical Colleges October 30-31 in Washington. While there, he addressed the open meeting for the review of *Academic Medicine,* a journal for which he is one of the founding board members.

■ **David P. Clark, M.D.**, and **Susan M. Zurowski, M.D.**, assistant professors of dermatology, are conducting research on the treatment and effects of retinoids on photodamaged skin. The nine-month clinical, double-blind study will follow the progress of menopausal women using Retin-Atm on facial skin.

■ **Armando R. Favazza, M.D.**, professor and associate chairman of psychiatry, recently participated in two meetings in England. He chaired a symposium on cross-cultural research at the annual meeting of the Society for the Study of Psychiatry and Culture in Surrey and lectured on "Why Patients Mutilate Themselves" at Middlesex Hospital-University College in London.

■ **Michael S. Korenfeld, M.D.**, won first prize in a manuscript contest for ophthalmology residents announced at the recent American Academy of ophthalmology meeting in New Orleans. He will receive a $2,500 prize and MU's Mason Institute of Ophthalmology $1,000 for the article "Atrial Natriuretic Factor-Effects on the Rabbit Cornea."

■ **Marian Minor, Ph.D.**, clinical instructor of immunology and rheumatology, spoke on physical fitness in arthritis at the Update on Rheumatic Disease conference in November at the American College of Rehabilitative Medicine in San Antonio.

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In Memoriam

■ **Donald S. Ferguson, M.D.**, died November 1, 1989 at the age of 82. Dr. Ferguson, a dermatologist, practiced medicine in the Kansas City area for almost 40 years before he retired in 1980. He was a personnel physician at the Bendix Corporation for nine years. He obtained his medical degree at the University of Kansas in 1942. Dr. Ferguson was a member of the Metropolitan Medical Society of Greater Kansas City.

■ **Paul S. Lowenstein, M.D.**, died October 12, 1989 at the age of 95. Dr. Lowenstein, a surgeon, practiced medicine in St. Louis for more than 40 years before retiring from active practice in 1966. He continued to work in the emergency room at Jewish Hospital, and he did surgical review work for Blue Cross of St. Louis. He obtained his medical degree at St. Louis University in 1917. Dr. Lowenstein was a member of the St. Louis Metropolitan Medical Society.

■ **Kenneth L. Milstead, Jr., M.D.**, died November 9, 1989 at the age of 53. Dr. Milstead, an anesthesiologist, practiced medicine in St. Louis. He obtained his medical degree at Georgetown University School of Medicine in 1964. Dr. Milstead was a member of the St. Louis Metropolitan Medical Society.

■ **Benjamin H. Zwirn, M.D.**, died October 29, 1989 at the age of 63. Dr. Zwirn, a pediatrician, practiced medicine in Florissant for 30 years and was also on the staffs of Depaul Health Center and Christian Hospitals Northeast-Northwest. He obtained his medical degree at the University of Basel, Switzerland in 1954. Dr. Zwirn was a member of the St. Louis Metropolitan Medical Society.

Physician's Recognition Awards

Fifty MSMA members qualified for the MSMA-AMA Physician's Recognition Award during October 1989. The award, presented by the Missouri State Medical Association and the American Medical Association, is given to those physicians who voluntarily complete 150 credit hours of continuing medical education within a three-year period. Sixty of the credit hours must be earned in Category I programs.

Boone

Charles M. Swaney, *Columbia*

Buchanan

Donald E. Sklenar, *St. Joseph*
Richard J. Walsh, *St. Joseph*

Butler-Wayne-Ripley-Carter

Richard A. Fraser, *Poplar Bluff*

Cape Girardeau

Charles H. Cozean, *Cape Girardeau*

Clay-Platte

Herbert E. Arst, *Kansas City*
Janice K. McGovney, *Smithville*
Charles J. Siegel, *Kansas City*
John M. Webb, *North Kansas City*
Allan R. Weide, *North Kansas City*

Greene

Albert I. Decker, *Springfield*
William A. Hardman, *Springfield*
James S. Key, *Springfield*
William S. Magill, *Springfield*
Donald S. Overend, *Springfield*
Paul E. Sauer, *Springfield*
Catherine L. Schane, *Springfield*
Melvin O. Walker, *Springfield*
Joel E. Waxman, *Springfield*

Metro. Med. - Greater Kansas City

Glenn A. Barr, *Kansas City*
John G. Campbell, *Kansas City*
Jon E. Gustafson, *Lee's Summit*
Forrest H. Kendall, *Kansas City*
Alexander G. Mallouk, *Kansas City*
Gregory A. Markway, *Blue Springs*
Hal E. Marshall, *Kansas City*
Mark D. Ost, *Kansas City*
Arthur W. Robinson, *Kansas City*
Mark K. Taormina, *Independence*
John G. Yost, *Kansas City*

Northwest

Edward F. Bare, *Tarkio*

Ozarks

George C. Olive, *Neosho*

St. Charles-Lincoln

Brian W. Stufflebam, *St. Peters*

St. Louis Metropolitan

Daniel J. Bauer, *Creve Coeur*
Catherine E. Beal, *St. Louis*
John L. Bircher, *St. Louis*
Galileu Cabral, *St. Louis*
Jad M. Gennaoui, *St. Louis*
John A. Headrick, *St. Louis*
William H. Huffaker, *Chesterfield*
Steven M. Johnson, *St. Louis*
John S. Meyer, *Chesterfield*
Larry D. Paskar, *Chesterfield*
Samuel G. Ramirez, *St. Louis*
Earl R. Schultz, *St. Louis*
Sameer I. Shehadi, *St. Louis*
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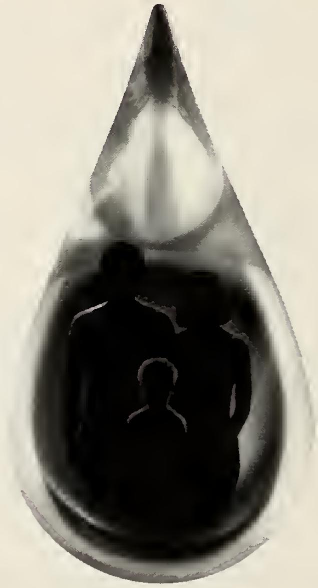

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New Members

■ **Thomas R. Baeker, M.D.,** 3401 Berrywood Dr., Columbia 65201, has become a member of the Boone County Medical Society. Dr. Baeker received his preliminary education at the University of Missouri-Columbia and obtained his medical degree at the University of Missouri-Columbia School of Medicine in 1980. He completed his residency at the University of Missouri Hospital and Clinics, Columbia, MO. Dr. Baeker specializes in internal medicine.

■ **Sheldon R. Braun, M.D.,** University of Missouri-Columbia School of Medicine, MA419, One Hospital Drive, Columbia 65212, has become a member of the Boone County Medical Society. Dr. Braun received his preliminary education at Western Reserve University and obtained his medical degree at the University of Pittsburgh in 1968. He completed his residency at the University of Wisconsin Medical School, Madison, WI. Dr. Braun specializes in internal medicine.

■ **Charles W. Caldwell, M.D.,** Dept. of Pathology, MA263, University of Missouri School of Medicine, Columbia 65212, has become a member of the Boone County Medical Society. Dr. Caldwell received his preliminary education at Arkansas State University and obtained his medical degree at the University of Missouri-Columbia School of Medicine in 1981. He completed his residency at the University of Missouri School of Medicine, Columbia, MO. Dr. Caldwell specializes in pathology.

■ **Claude R. Cloninger, M.D.,** 4940 Audubon Ave., St. Louis, MO 63110, has become a member of the St. Louis Metropolitan Medical Society. Dr. Cloninger obtained his medical degree at Washington University School of Medicine in 1970. He completed his residency at Washington University School of Medicine, St. Louis, MO. Dr. Cloninger specializes in psychiatry.

■ **Nicholas B. Couper, M.D.,** 1506 E. Broadway, Columbia 65201, has become a member of the Boone County Medical Society. Dr. Couper received his preliminary education at the University of Virginia and obtained his medical degree at Washington University School of Medicine in 1978. He completed his residency at the University of Missouri Hospital and Clinics, Columbia, MO. Dr. Couper specializes in anesthesiology.

■ **Gregory H. Crou, M.D.,** Division of Plastic Surgery, University of Missouri Hospital and Clinics, M349, #1 Hospital Drive, Columbia 65212, has become a member of the Boone County Medical Society. Dr. Crou received his preliminary education at the University of Missouri-Columbia and obtained his medical degree from the MU School of Medicine in 1979. He completed his residency at the University of Missouri Hospital and Clinics, Columbia, MO. Dr. Crou specializes in plastic surgery.

■ **James P. Emanuel, M.D.,** 456 N. New Ballas, St. Louis 63141, has become a member of the St. Louis Metropolitan Medical Society. Dr. Emanuel obtained his medical degree at Washington University School of Medicine in 1983. He completed his residency at Barnes Hospital, St. Louis, MO. Dr. Emanuel specializes in orthopedic surgery.

■ **Robert B. Fisher, D.O.,** Dept. of Anesthesiology, N314 Health Sciences Center, University of Missouri School of Medicine, Columbia 65212, has become a member of the Boone County Medical Society. Dr. Fisher received his preliminary education at the University of Missouri-Kansas City and obtained his osteopathic degree at the Kansas City College of Osteopathic Medicine in 1980. He completed his residency at the University of Missouri School of Medicine, Columbia, MO. Dr. Fisher specializes in anesthesiology.

■ **Bradley D. Fouraker, M.D.,** 3655 Vista Avenue, St. Louis, 63110, has become a member of the St. Louis Metropolitan Medical Society. Dr. Fouraker obtained his medical degree at the University of Florida in 1983. He completed his residency at Ochsner Hospital and Foundation, New Orleans, LA. Dr. Fouraker specializes in ophthalmology.

■ **Rose M. Gowen, M.D.,** 1035 Bellevue Ave., Suite 314, St. Louis 63117, has become a member of the St. Louis Metropolitan Medical Society. Dr. Gowen obtained her medical degree at the University of Texas Southwestern in 1984. She completed her residency at St. Louis University Hospitals, St. Louis, MO. Dr. Gowen specializes in obstetrics/gynecology.

■ **Margarethe H. Hagemann, M.D.,** 11475 Olde Cabin Road, St. Louis 63141, has become a member of the St. Louis Metropolitan Medical Society. She obtained her medical degree at the Medical College of Wisconsin in 1971. She completed her residency at the Medical College of Wisconsin, Milwaukee, WI. Dr. Hagemann specializes in internal medicine.

■ **Mike Kozminski, M.D.,** 1322 North 36th St., St. Joseph 64506, has become a member of the Buchanan County Medical Society. Dr. Lozminski received his preliminary education at Albion College and obtained his medical degree at the University of Michigan Medical School in 1984. He completed his residency at the University of Michigan Medical Center, Ann Arbor, MI. Dr. Kozminski specializes in urology.

■ **Richard E. Marsan, M.D.,** Radiology Dept., University of Missouri Hospital and Clinics, One Hospital Drive, Columbia 65212, has become a member of the Boone County Medical Society. Dr. Marsan received his preliminary education at the University of Nebraska and obtained his medical degree at the University of Nebraska College of Medicine in 1966. He completed his residency at Loyola University Medical Center, Maywood, IL. Dr. Marsan specializes in diagnostic radiology.

■ **David L. McLaren, M.D.,** 1701 E. Broadway, Columbia 65201, has become a member of the Missouri State

Medical Association. Dr. McLaren received his preliminary education at the University of Oklahoma and obtained his medical degree at the University of Oklahoma College of Medicine, in 1980. He completed his residency at the University of Chicago, Chicago, IL. Dr. McLaren specializes in neurology.

■ **Thomas Pittman, M.D.**, 3635 Vista at Grand Blvd., P.O. Box 1250, St. Louis 63110, has become a member of the St. Louis Metropolitan Medical Society. Dr. Pittman received his preliminary education at Rensieber Polytechnic Institute and obtained his medical degree at Albany Medical College in 1982. He completed his residency at St. Louis University Hospitals, St. Louis, MO. Dr. Pittman specializes in neurosurgery.

■ **Robert F. Schwarze, D.O.**, 1120 Graham Rd., Florissant 63031, has become a member of the St. Louis Metropolitan Medical Society. Dr. Schwarze obtained his osteopathic degree at the University of Health Sciences-Kansas City in 1980. He completed his residency at Metropolitan Hospital, Kansas City, MO. Dr. Schwarze specializes in dermatology.

■ **James J. Spadaro, M.D.**, 10004 Kennerly Rd., Suite 171-B, St. Louis 63128, has become a member of the St. Louis Metropolitan Medical Society. Dr. Spadaro received his preliminary education at Louisiana Tech University and obtained his preliminary education at Louisiana State University School of Medicine in 1976. He completed his residency at Washington University School of Medicine, St. Louis, MO. Dr. Spadaro specializes in cardiology.

■ **John A. Stith, M.D.**, 3635 Vista Ave., at Grand Blvd., P.O. Box 15250, St. Louis 63110, has become a member of the St. Louis Metropolitan Medical Society. Dr. Stith obtained his medical degree at Ohio State University College of Medicine in 1973. He completed his residency at Wilford Hall USAF Medical Center, Lackland AFB, TX. Dr. Stith specializes in pediatric otolaryngology.

■ **Douglas L. Stokes, M.D.**, 3107 Frederick Ave., St. Joseph 64506, has become a member of the Buchanan County Medical Society. Dr. Stokes received his preliminary education at Union College and obtained his medical degree at Loma Linda University School of Medicine in 1983. He completed his residency at Loma Linda University Medical Center, Loma Linda, CA. Dr. Stokes specializes in orthopaedic surgery.

■ **Jeffrey P. Tillinghast, M.D.**, 10287 Clayton Rd, St. Louis 63124, has become a member of the St. Louis Metropolitan Medical Society. Dr. Tillinghast obtained his medical degree at Washington University in 1980. He completed his residency at Barnes Hospital, St. Louis, MO. Dr. Tillinghast specializes in internal medicine.

■ **Paul C. Vose, M.D.**, 10822 Sunset Plaza, St. Louis 63127, has become a member of the St. Louis Metropolitan Medical Society. Dr. Vose obtained his medical degree at the University of Alabama in 1964. He completed his residency at Fitzsimons General Hospital, Denver, CO. Dr. Vose specializes in general surgery.

■ **Robert T. Weigand, M.D.**, 3918 Sherman Ave., St. Joseph 64508, has become a member of the Buchanan County Medical Society. Dr. Weigand received his preliminary education at the University of Kentucky and obtained his medical degree at the University of Louisville in 1976. He completed his residency at the University of Louisville, Louisville, KY. Dr. Weigand specializes in hematology/oncology.

■ **Simon M. Yu, M.D.**, 4061 Lindell Blvd., St. Louis 63108, has become a member of the St. Louis Metropolitan Medical Society. Dr. Yu obtained his medical degree at the University of Missouri-Columbia in 1984. He completed his residency at St. Mary's Health Center, Richmond Heights, MO. Dr. Yu specializes in internal medicine.

■ Resident Sections

Boone County Resident Section

Michael S. Brown, M.D. — *anesthesiology*
Paul D. Rottler, M.D. — *plastic surgery*

Metro Med Resident Section

Robert J. McQuillan, M.D. — *anesthesiology*

St. Louis County Resident Section

John A. Bohllier, M.D. — *urology*
John A. Petros, M.D. — *urology*
Teresa M. Petros, M.D. — *pediatrics*
Becky A. Pew, M.D. — *psychiatry*

■ Student Members

■ St. Louis University

George Anderson
Michael D. Anderson
Aryan Azimi-Zonooz
Adrian Bartoli
Christopher Bee
Joseph W. Bergeron
Ross Brunetti
Mary F. Burgesser
Marcia Burman
Philip T. Caruso
Glenn Chiang
Galen Chun
Thomas E. Collins, Jr.
Cori Daines
Michael Daines
Thomas A. Dalsaso, Jr.
David O. Danis, Jr.
Deep R. Dudeja
Thomas E. Fagan
Randy P. Fiorentino
Robert C. Greenberg
Kelley M. Gross
Suniz C. Gupta
Daniel R. Harrah
Joseph G. Herrmann
Daniel Hesskamp
Steven A. Hilton
Terri L. Hoffman
Myron Kamenetsky
Jennifer L. Krupp
Paul G. LaPoint
Kim MacDonnell
Louise Maedo
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Ashish Sehgal
Gregg Teigen
Ine M. Tejarahadi
Thomas Terramani
William R. Weaver
Joseph P. Williams, III
Camille R. Williams
Michael F. Whelan
Scott Yale
Thomas S. Yu

University of Missouri-Columbia

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Teena L. Sharrock
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Christine M. Deeths
Derek Duke
David H. Frohman
Ethiopia Gebeyehu
Steven D. Gurley
David K. Head
Stacie M. Heiker
David B. Karty
Rebecca K. Lefcourt
Christina N. Lenk
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Patricia A. Loftus
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Hao N. Nguyen
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Jack Stauffer
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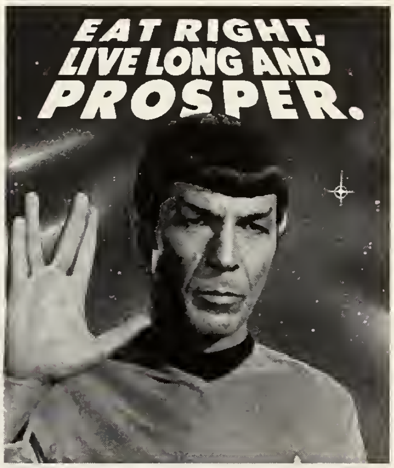

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References

References should be cited in numerical order in the text and arranged at the end of the article in the same order in which they are cited. The reference should give name of author, title of article, name of periodical, volume number, initial page number and year. Authors are responsible for reference accuracy.

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Letters

Letters will be published at the discretion of the editor, managing editor, and Editorial Board.

Deadline

All material other than scientific should be received prior to the first of the month preceding month of publication.

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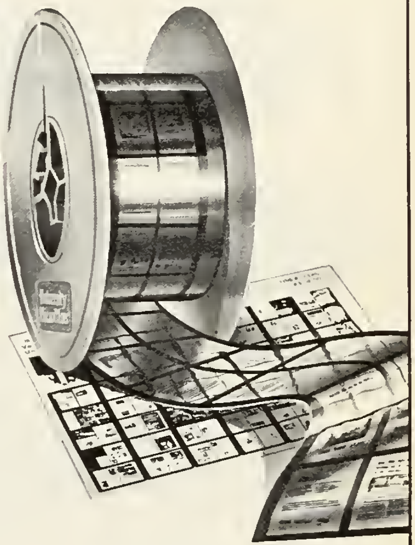

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Resolutions not submitted before the deadline must be introduced under the procedure outlined in the MSMA Bylaws, Chapter III, Sect. I. Prompt submission of resolutions assures their inclusion in the Handbook and allows for their full consideration.

If you have questions regarding resolution submission, contact Jo-Ellyn M. Ryall, M.D., Speaker, MSMA House of Delegates, 9216 Clayton Rd, #105, St. Louis, MO 63124, 314/868-7700 or MSMA Headquarters.

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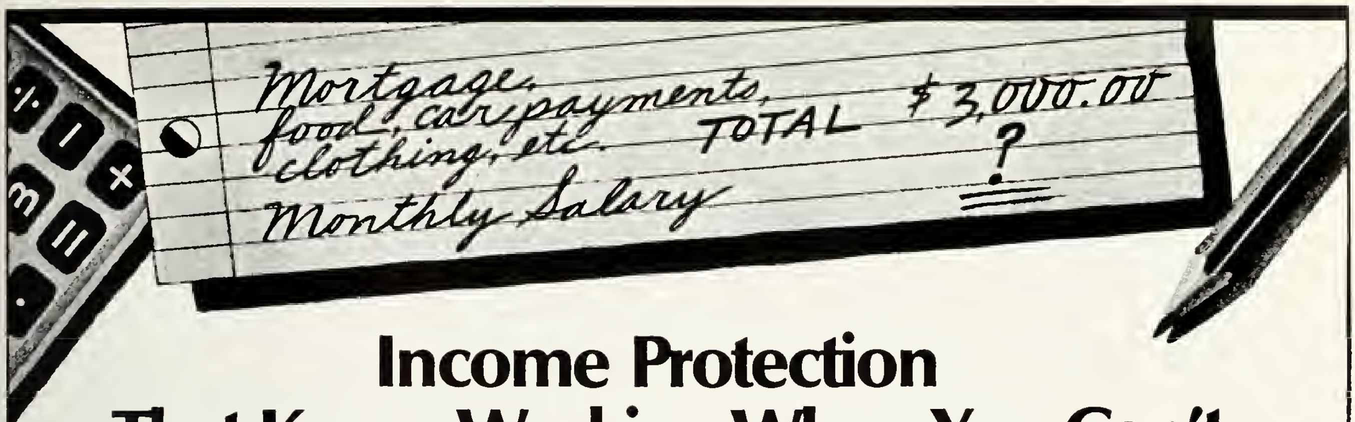

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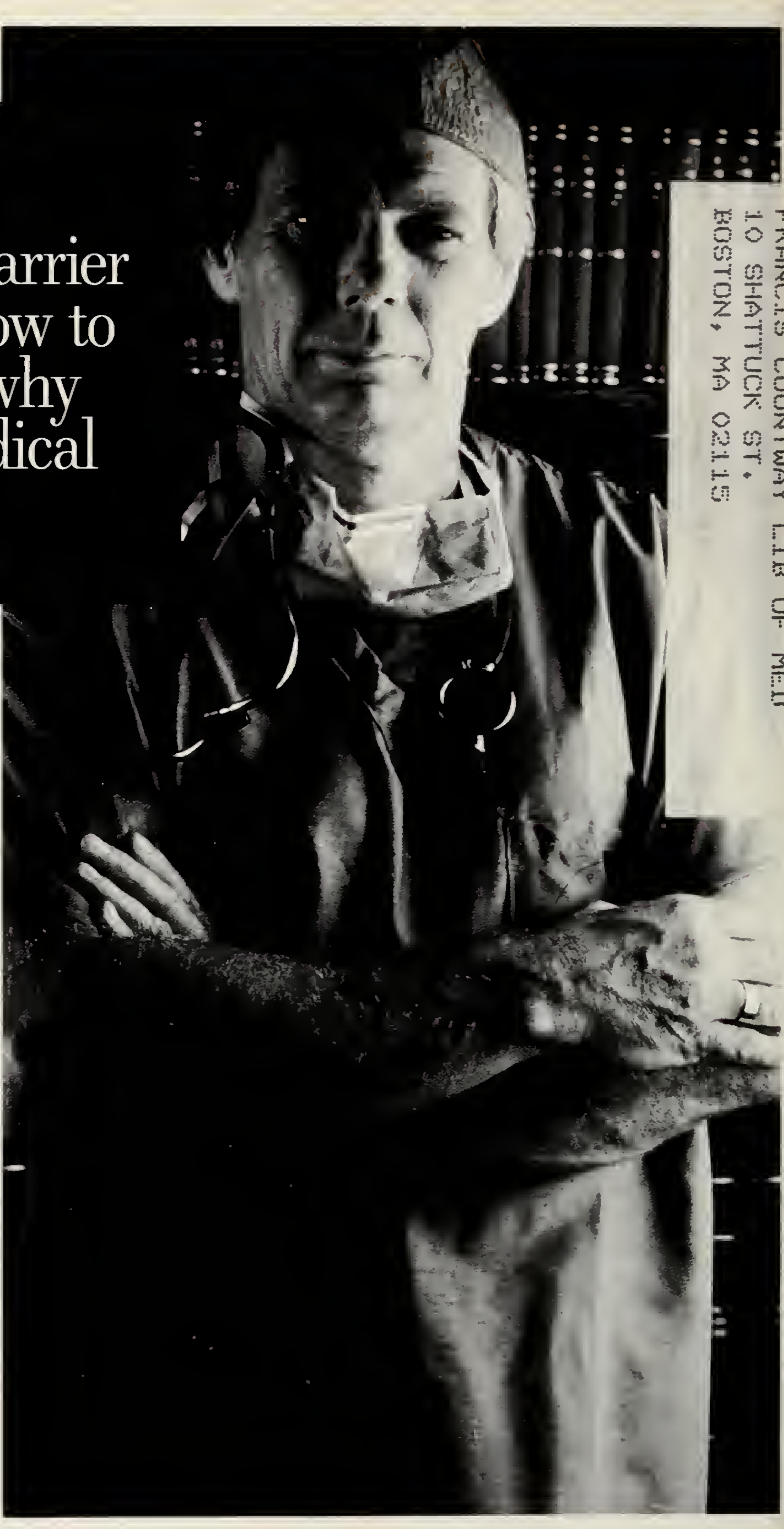

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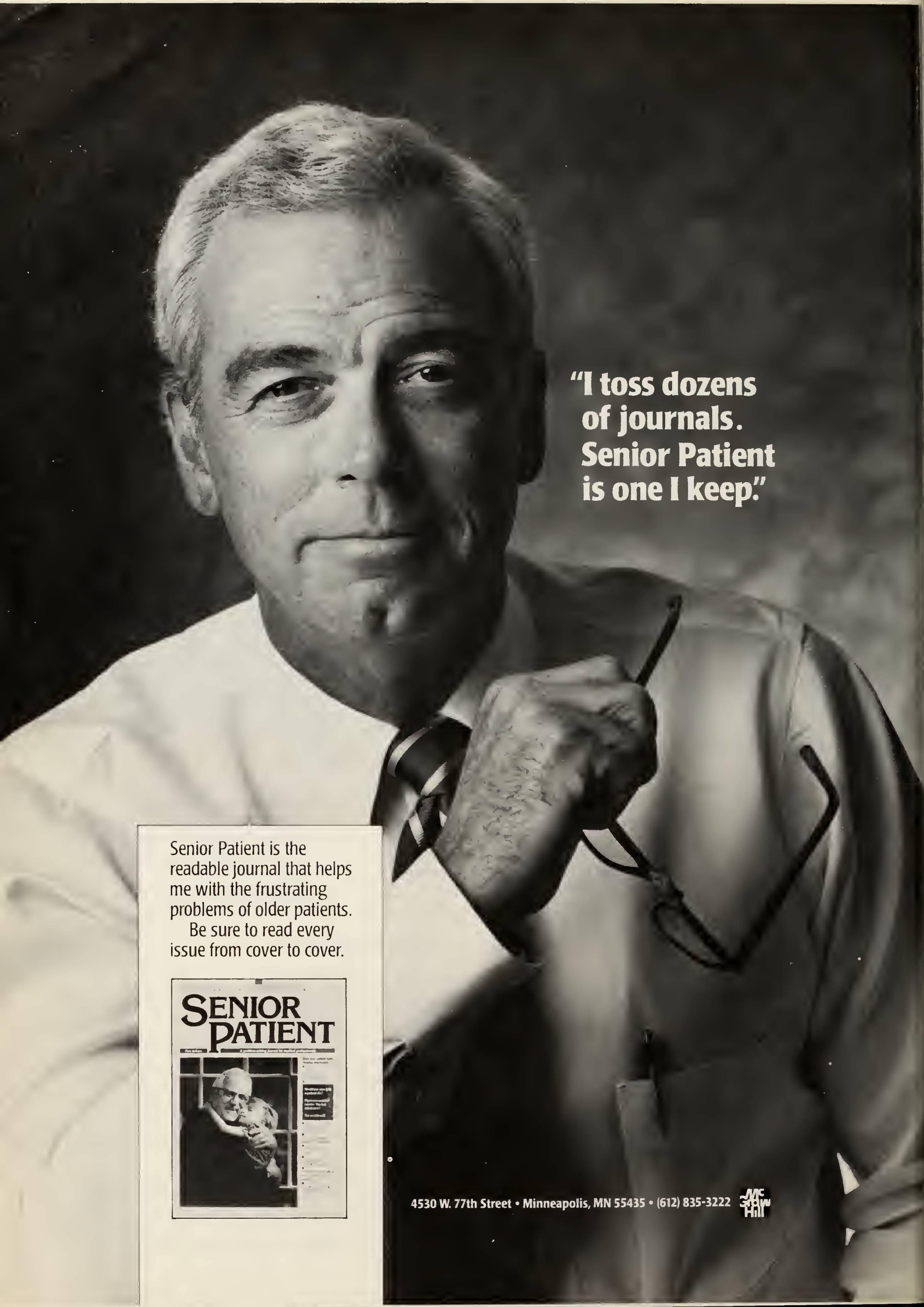

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COMMENTARY

Rural Obstetric Care: Where Has it Gone?

by William D. Bradshaw, M.D.

Obstetric care in rural Missouri is perched precariously on the edge of non-existence. We must act now to reverse the loss of rural general and family practitioners practicing obstetrics to ensure the well-being of mothers and infants in our state.

Verification of a problem facing Missouri medical care is excellently documented in an article on page 92 of this issue of *Missouri Medicine* titled, "Obstetric Care in Rural Missouri: The Loss of Rural General and Family Practitioners," written by Steven Zweig, M.D., et al. The material presented is the product of a well-defined study accomplished with the cooperative efforts of the Department of Family and Community Medicine of the University of Missouri-Columbia School of Medicine.

Family and general practitioners have historically provided a substantial portion of obstetric care in rural parts of the United States, including Missouri. The loss of obstetric services in rural Missouri is not likely to be easily replaced.

The methodology used by Zweig et al and the results he has appended to the decline in population of rural generalists, along with the discussion section of the presentation, are excellent. The problem is extremely well "framed" in the article as presented and verifies the "common experience," as perceived by the general population in Missouri today.

Basic in the causative factors is the tort system. It was observed that although other factors are operative, the tort system seems more significant in the diminishing populations of physicians for delivery. The present tort system contributes to disrupting delivery of care throughout the country. The cost of the threat of liability encourages the use of a variety of unnecessary procedures. Providers and patients have lost confidence in tort litigation as a method of resolving claims in medical malpractice. Fortunately, tort reform is presently being tested not only in the United States, but particularly in Missouri. However, until more data accumulate from the reforms presently in place, it will be difficult to evaluate their effect and their effectiveness.

Until permanent solutions can be found for the alternatives or corrections in the tort system, it would seem certain "short-term" solutions might be considered for Missouri. Obstetric care for women who are supported through or partially financed by Medicaid, should mean a reduced professional liability risk for the providers who provide the services. If the reduction of the risk can be accomplished by congressional mandate or by statute, then coverage for the liability premium could be supplied by Medicaid.

Continued education of the patient and patient's family must be accomplished in an effort to alter the adversarial atmosphere of inappropriate patient expectations. The intrusions on the lifestyles of physicians is necessarily a part of the obstetrical practice and must be offset by providing sufficient collegial relationships, so that physicians will have sufficient time to maintain a manageable existence as well as continue to meet all the other demands of a busy medical practice.

Physicians also noted that the over-regulated system presently in

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Commentary

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operation adds further economic burden by requiring more time and personnel to conduct practices. The loss of specialty back-up coverage is often quoted. An enhanced process of education between the remaining obstetricians in areas of coverage and the local physicians could be a possible solution for loss of back-up coverage.

Anyone in general practice should feel emotionally fulfilled by conducting prenatal visits and being a part of the delivery process, in addition to caring for the myriad needs of the total family.

The problem has been well delineated. Women living in rural areas are likely to have fewer obstetric care providers available, they may have to travel longer distances for routine obstetric care, and they often have insufficient insurance and other economic resources to access care.

Although Medicaid provides funding for some women, it does not cover them all. The emotional and social stature of both physician and patient is less than desirable. The present solutions will only lead to further depersonalization of medicine, in an area that in the past has been a critical element of building rapport and stability within the medical delivery system of rural Missouri.

Now is the time for the principal participants to become familiar with the ramifications of this well-identified problem. Patients, doctors, lawyers, sociologists, third-party carriers and insurance companies must meet, think and act together to resolve this problem. With all of the participants involved in such a way as to ensure the well-being of mothers and infants, there is much to be gained by working together.

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EDITOR'S DESK

by Donald G. Sessions, M.D.
Editor

Self-Recognition

He was referred by a colleague for a chronic sinus problem. For several years he had noticed pressure in his cheeks and intermittent drainage from his nose that remained unresponsive to medical management. He was almost apologetic about "bothering" me with such a "minor" problem. He spoke with an accent, one hard to place. He maintained a natural politeness — a way of being which seemed both trusting and direct. Ours would be a formal relationship.

He possessed a quiet and powerful dignity. He formed his words very slowly and when he spoke time seemed to disappear. It seemed inconceivable that someone would dare to interrupt him, yet when he was through speaking, he waited expectantly for what I had to say. He listened intently, concentrating on every word. A twinkle in his eye gave one the impression that we shared some mutual knowledge — something about which we could both smile.

He dressed plainly but with great care, much like an "old world" tailor. He was a salesman in the garment industry. During my examination I noticed a tatoo on his wrist. It was a number. Neither of us mentioned it.

I saw him regularly over the next few years. Several operative procedures proved only mildly successful. He took this with equanimity, and we maintained a trusting, comfortable, yet reserved relationship.

One afternoon he came in for his regular check-up. He was concerned, he said, about his upcoming retirement. He had talked to me about it for some time with a certain satisfaction, but unfortunately its reality pressed him in a most unexpected way. Doubts about the future triggered fears from his past — his experiences in Auschwitz. We had never discussed this episode of his life, but now he wanted to talk. I listened, mesmerized by his story. As he talked about his experiences, it was clear that he was totally caught up in them; yet he could still look at them with an objectivity obtainable only after 40 years of living. People, he said, had described him as courageous. But the really courageous ones, he claimed, were those who had hidden him and put their own lives at risk even though they didn't know him. He spoke of a particular young girl who found herself in an especially dangerous situation just because of him.

As he talked he seemed to shed part of his burden, as if he realized that the fear surrounding his retirement was in reality a fear of the unknown, a fear of his own mortality. The twinkle I had seen before returned to his eyes.

For me, it was a remarkable encounter. For a brief period, I was transported into an historical experience; I was really there with him. More remarkable was the fact that during this interchange, I had only listened. Yet, somehow the linguistic act of listening had produced a powerful result.

I marvel at the privilege of being a physician. How is it that we seem to acquire the trust that enables relative strangers to submit themselves to us? How is it that patients give us access to both their bodies and their innermost thoughts? This appears to happen when we present ourselves to patients as human beings with empa-

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Editor's Desk

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thy and compassion; when we are somehow able to mirror these phenomena to them so that they recognize these and other human phenomena in themselves. This process is seldom the result of a single encounter and may come about more as a result of the general atmosphere than of any special words said.* During this process of self-recognition, the patient's confidence increases. In the latter stages of the interaction, it is the physician's acceptance of the patient's experiences that complete the process. The physician's appreciation of how the different parts of the patient's life fit together eventually convince the patient that he, the physician and other men are comparable. This occurs when the patient's view of himself, his fears and even his dreams seem to be at least as familiar to the physician as to himself. The patient's experience of acceptance and self-recognition can then allow for adaptation or cure.* ■

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*Berger J, Mohr J. *A Fortunate Man.* Pantheon Books, Random House, Inc., New York, 1967.

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President's Page

by Marvin A. Singleton, M.D.
MSMA President

The Missouri Legislature is in Session and the time is now for the physicians of Missouri to make their voices heard. Don't wait — Make a difference in 1990.

Can You Make A Difference?

This question is one often asked, seldom addressed and rarely answered. But it is a question that is better answered by examples. A recent example of making a difference has been Resolution Number 18, calling for changes in Medicaid. As you remember, this resolution was passed by the House of Delegates at the MSMA 131st Annual Meeting held in St. Louis. Among the proposed changes are an increase in global fees for obstetrical care; an increase in parity with other health care providers, and a cap until this has been accomplished; an expansion of the Medicaid eligibility; a decrease in paperwork, and more simplified claims. All of these recommendations were incorporated into the findings of the Department of Social Services' Physician Task Force on Medicaid, the level of which it was agreed would be 60% parity instead of 75% as called for in the resolution. The Department of Social Services has agreed to support the global fee increase for obstetrical care and Missouri Governor John Ashcroft has announced his support for this concept and included it in his State of the State Address on January 9, 1990 when he addressed a joint session of the Missouri Assembly.

The recommendations of the Task Force are now before the Legislature. You can begin to make a difference, by becoming active at the local level. Then, testify before the various departments of the Executive Branch. Petition the Governor and finally, go to Jefferson City and be heard before the various committees of the Missouri Assembly. You must direct your efforts toward making your wishes known to the Legislature.

Last year, more than 60% of all physician visits to the Legislature were organized from St. Louis. This makes a difference. As President of the Missouri State Medical Association, I have called for the Association to organize weekly trips to Jefferson City on chartered buses with on-board refreshments. The trips would include briefings and organized tours of the Capitol, a buffet luncheon with Legislators and a return trip home by dark. The Physician Involvement Program (PIP) of the MSMA, which allows participation in politics by physicians, can make a difference.

There are many other issues that will be brought before the Legislature, including a provision calling for mandated acceptance of Medicare Assignments, link to licensure; a call for socialized medicine on the same basis as the Canadian system; and the expansion of many para-professionals into the area of practice of medicine.

You have the chance to make a difference, and if you care enough to put forth the effort, you *can* make that difference. But the time to act is *now*. Be heard in Jefferson City. Be heard at the annual meeting by submitting resolutions to the House of Delegates through your councilors and delegates to the 132nd Annual Meeting to be held April 5-8 at Tan-Tar-A Resort, Lake of the Ozarks. The deadline

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for those resolutions is **February 15, 1990.** In order for the Missouri State Medical Association to truly represent members, the members have to care to make a difference.

■

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Auxiliary Message

by Mary Hunkeler
MSMAA Legislation Chairman

> *Jump into the 1990s by attending the MSMA Auxiliary Annual Day at the Legislature on Wednesday, March 7. Do your part to be sure Medicine's concerns are heard!*

Legislative Issues: Get the Facts and Act

The New Year is more than resolutions and good intentions. It is also the time when the General Assembly gears up for a new legislative session full of good intentions and resolve to serve its citizenry.

As members of the medical community, we too must adopt a new attitude that includes:

- a willingness to be better informed about legislative issues affecting medicine
- a willingness to take the time and effort to become acquainted with our legislator(s)
- a willingness to allow the legislator(s) to know us and our concerns for medicine.

Make sure your spouse is an Auxiliary member. Encourage and support your spouse's participation in local and state legislative activity including becoming a Key Contact, attending Day at the Legislature, and reading Auxiliary publications about legislative efforts.

As a physician, you may sign up for the PIP program and receive first-hand legislative information and immediate access to legislation. As a Key Contact, you are given privileged information which keeps you on top of current medical legislation. Support your county and state organization in their efforts to make the voice of medicine heard. Make use of another resource — the MSMA staff. Their resolve and hard work at the Capitol show positive results for Missouri medicine on a year-round basis.

On Wednesday, March 7, you will be given an opportunity to get involved. Join your MSMA Auxiliary spouse and come to Jefferson City for an informative and worthwhile Day at the Legislature. Attend PIP in the morning, have lunch with your member spouse and legislators — talk with them, listen to their problems and express your concerns. For more information, ask your spouse or call Mary Hunkeler, MSMA Auxiliary Legislation Chairman at 913/677-0213.

With physicians, member spouses and the MSMA staff working together our legislative efforts and resolve can be effective. We all benefit! ■

Day at the Legislature Preliminary Agenda

8:00 - 9:30 a.m. Optional:
Meet with PIP members at MSMA office.
9:30 a.m.
Registration in the Capitol Room. Continental breakfast served.
10:00 - 11:00 a.m.
Briefing for Capitol visit and overview of important legislative issues by Tom Holloway, MSMA Director of Governmental Relations.
11:00 a.m. - Noon
Capitol. Visit with legislators, staff.
12:15 p.m.
Lunch at Capitol Plaza Hotel. Introduction of legislators.
1:15 - 2:15 p.m.
Panel discussion.
2:30 p.m.
Adjourn.

Tobacco Conference 1990

A Forum for Professionals

March 8, 1990
Capitol Plaza Hotel • Jefferson City, Missouri
Sponsored by the **Missouri Coalition on Smoking and Health**

Special Guest Speaker: **C. Everett Koop, M.D., Sc.D.**

Purpose: To present information related to nicotine addiction, patient/client counseling on smoking cessation, and legislative and economic issues related to tobacco.

Objectives: At the end of the conference participants will be able to • Identify the impact of tobacco use on the health of Missourians • Discuss the physiological and psychological aspects of nicotine addiction • Identify the process to assist the patient/client in smoking cessation • Discuss community approaches related to preventing tobacco use • Identify the current tobacco related legislation before the Missouri General Assembly • Discuss the economic impact of tobacco use.

Who Should Attend: Physicians, dentists, pharmacists, nurses, other health professionals, legislators and their staff, community leaders, education professionals, media, and others interested in tobacco control issues. CME and CEU registration will be handled the day of the conference.

For More Information: Call Monica Eischen at (314) 875-2218 for a conference brochure and agenda.

REGISTRATION FORM

Make checks payable to **American Lung Association of Eastern Missouri** and mail to:
Tobacco Conference 1990, 1118 Hampton Ave., St. Louis MO 63139

Name ______________________ Day Phone ____________
Organization ______________________
Street ______________________
City/State/Zip ______________________

I am applying for CEU's (Check one) ☐ Physician - SS# ____________ ☐ Dentist
☐ Family Practice Physician - SS# ____________ ☐ Nurse - include license # ________

Registration Fee:	Before Mar. 1	After Mar. 1
Physician, Dentist, Pharmacist	$75	$90
Others	$45	$60
Students	$20	$35

PRACTICE MANAGEMENT

by Janice K. Woerth, Ph.D.

Do you have a question for Dr. Woerth? Include your questions along with your name, address and phone number and send them to:

Janice K. Woerth, Ph.D.
Practice Management
c/o Missouri Medicine
P.O. Box 1028
Jefferson City, MO 65102
Or call her direct:
816/587-1125

Although your name will not be used in the journal, please include your name and phone number so that Dr. Woerth may contact you if she needs additional information to answer your question.

Dear Dr. Woerth:

At this time we are trying to make a decision about our participation status with Medicare in 1990. Have you any recommendations as to what we might review to help us make an objective decision? It seems that every year our decision is based on subjective information, i.e. what other colleagues are doing, and not on facts about our practice.

A.F.

Dear A.F.:

There are several factors about your practice that you can examine to determine if participation in Medicare is to your advantage. First, review the demographics of your practice. You should know what percentage of your patients are covered by Medicare and the income levels of your Medicare population. You can learn general information about population income levels through the Chamber of Commerce, the AMA Market Area Profile service or you could develop a demographic questionnaire to send to all your patients. You also need to learn how many other practices in the area offer the same services to Medicare patients. This information is especially important if you change your status from participating to non-participating. Generally, your patients will pay a larger portion for their Medicare services if you do not participate. You need to know if your patients can afford to pay this larger share or if they will change to another practice because of it.

Learn what percentage of your charges are generated from Medicare patients, how many of these charges are sent to collections and how old the account receivables are for your Medicare patients. It may be that a change in participation status will result in fewer Medicare patients. But, if these people are not paying their bills now, it may be better financially for the practice. Also consider the amount of time you spend with a Medicare patient. Does the same level office visit take longer for a Medicare patient than for a non-Medicare, i.e. a younger patient? It may be that the extra time spent treating Medicare patients reduces your potential revenue. Switching your participation status to attract more Medicare patients may not be the best thing for your practice.

Think about the type of practice you want. Are the services you generate for Medicare patients the type of medicine you enjoy practicing? Do you want to build your practice or is it already too busy? You may even wish to reduce the size of your practice. How will this effect your decision to participate with Medicare?

Finally, consider your office staff. How quickly and accurately do they process insurance claims? If you do not participate with Medicare you do not have to complete claim forms for patients (although you have to supply ICD-9 codes and CPT-4 codes to the patients so they can complete their own Medicare forms). However, non-participating physicians are subject to MAAC (Maximum Allowable Actual Charge) for Medicare patients. Because this charge will probably be lower than your usual charge, it is likely you will have two fee schedules — one for Medicare patients and one for non-Medicare patients. If you charge more than the MAAC to a Medicare patient, you are subject to a $2000 fine.

This year you have until April 1, 1990 to decide about participation status with Medicare. The more you know about the impact of Medicare patients on your practice and use this information in your decision for participation status, the more objective your decision. ■

SPECIAL ARTICLE

A Strategic Plan for the Elimination of Tuberculosis in the United States

Executive Summary Report

Tuberculosis is a communicable disease caused by bacteria (Mycobacterium tuberculosis complex) that are usually spread from person to person through the air. Airborne infectious particles are produced when a person with tuberculosis of the respiratory tract coughs. If inhaled by other persons, the bacteria cause an infection that spreads throughout the body. Most individuals who become infected do not develop a clinical illness because the body's immune system brings the infection under control. Infected persons do develop a positive TB skin test, however. The infection can persist for years, perhaps for life, and infected persons remain at risk of developing disease at any time, especially if the immune system becomes impaired. Although the disease usually affects the lung, it can occur at virtually any site in the body.

Although there are fewer cases now than in the past, tuberculosis persists as a public health problem in the United States and there remain isolated but potentially dangerous enclaves of this preventable and curable disease. From 1953 through 1984, the number of tuberculosis cases reported annually decreased an average of 5%. However, during the past three years, this long term downward trend has stopped and marked increases in tuberculosis morbidity have occurred in certain areas. These increases are primarily a consequence of tuberculosis occurring among persons infected with the human immunodeficiency virus (HIV, also known as the AIDS virus). Among HIV-infected and HIV-uninfected populations, tuberculosis continues to disproportionately affect the socioeconomically disadvantaged.

In 1987, the Secretary, Department of Health and Human Services, established an Advisory Committee for Elimination of Tuberculosis (ACET) to provide recommendations for the development of new technology, application of prevention and control methods, and management of state and local tuberculosis programs targeted toward the elimination of tuberculosis as a public health problem. In response to this charge, the committee has completed this plan for the elimination of tuberculosis after review and feedback from numerous interested individuals and organizations.

The committee urges the Nation to establish the goal of tuberculosis elimination (a case rate of less than 0.1/1000,000 population) by the year 2010, with an interim target of a case rate of 3.5/100,000 population by the year 2000. The case rate for 1986 was 9.4/100,000.

The committee believes that the goal can be achieved for three reasons: (1) tuberculosis is retreating into defined focal pockets; (2) the revolution in biotechnology has the potential for generating better diagnostic, treatment, and prevention modalities; and (3) computer, telecommunications, and other technologies have the potential for enhancing technology transfer.

The Plan

A plan was developed with the following three action steps:

Step 1. More effective use of existing prevention and control methods, especially in high-risk populations;
Step 2. The development and evaluation of new technologies for treatment, diagnosis, and prevention; and
Step 3. The rapid assessment and transfer of newly developed technologies into clinical and public health practice.

Priorities for Step 1 include adequate and appropriate treatment for all persons with tuberculosis, identification of high risk population groups within each geographic area, and the use of preventive treatment in the appropriate members of these groups. The elimination of tuberculosis in the United States is dependent upon the identification of groups at high risk of infection and disease. These groups vary by place, through time, and by personal characteristics. In 1988, the groups at high risk include HIV-infected persons, the homeless, the foreign-born, Hispanics, blacks, Native Americans, Asians/Pacific Islanders, intravenous drug abusers, and residents of correctional institutions and nursing homes. However, the changing ecology of tuberculosis is such that populations which are now at high risk may decline in risk over time, and groups not now identified to be at risk may become at risk. The Centers for Disease Control and state and local health departments are responsible for continuing surveillance activities to define which groups are at risk at any given time.

Having identified enclaves of infection and disease, health departments must assume responsibility for control by extending tuberculosis screening, treatment, and prevention programs to these groups. Whenever possible, members of high risk groups and their health care providers should be involved in the design and implementation of these programs and in marketing them to their constituents. Infected individuals should be treated preventively in accordance with the recommendations of the Centers for Disease Control and the American Thoracic Society, the medical section of the American Lung Association. Directly-observed (supervised) preventive therapy should be used whenever needed to insure compliance.

For each new case of tuberculosis, a specific health care provider should be assigned the responsibility for insuring that patients and their contacts are educated about tuberculosis and its treatment, insuring continuity of therapy, and insuring contact examination and preventive treatment. Directly-observed therapy should be used whenever needed. Quarantine measures, including temporary institutionalization, should also be used in those rare instances when an infectious patient refuses to comply with self-administered or directly-observed therapy.

Implementation of these recommendations will probably require an increase in the number of health department outreach staff who are linguistically and culturally identified with the population they serve. Although most of these workers are supported by Federal, State, and local governments, third party payment for the services they render (e.g., supervised therapy in lieu of long-term hospitalization) should become standard practice.

While intensification of the use of existing technologies as outlined above are essential in moving the Nation toward elimination, this step alone will not be sufficient to reach the goal. It is crucial that new technologies be developed. Recent developments in biotechnology are revolutionizing approaches to the diagnosis, treatment, and prevention of infectious diseases. By applying these new techniques to tuberculosis, it will be possible to develop the new tools needed to eliminate tuberculosis.

In Step 2, the highest priorities for research are (1) the development of simpler, safer, more effective and economical means of preventing the emergence of disease from the infected state and (2) a more specific method for distinguishing persons who harbor living tubercle bacilli from those who do not. Research directed toward developing a more reliably effective tuberculosis vaccine, more rapid and accurate diagnostic tests, and more effective and rapidly-acting drugs is also needed. Tuberculosis research has languished in recent years and needs to be revitalized. Federal agencies responsible for funding research activities must take the lead in ensuring that this occurs.

Step 3 concerns new technologies developed in the laboratory, the clinic, or elsewhere, their assessment and transfer in a timely and appropriate manner into clinical and public health practice. Federal agencies, professional societies, and schools of medicine, nursing, and public health play a major role in technology assessment and transfer. Public and private grant funds will be needed to support demonstration projects for technology assessment.

Health departments, medical and nursing schools, schools of public health, voluntary agencies, professional societies, and minority advocacy groups must better educate health care providers and high risk groups in the community about the signs and symptoms of tuberculosis and the methods of diagnosis, treatment, and prevention. Questions about tuberculosis should appear on the examination of the appropriate certifying and licensing boards.

National, regional, and state tuberculosis conferences will be needed to focus attention on the tuberculosis problem, current practices, progress, reformulation of objectives, innovative approaches and proposed new elimination strategies. A special Federal agency task force should be established to establish elimination objectives and synchronize plans for Federal agencies.

Specific elimination strategies must be devised for high-risk populations. This can best be accomplished in consultation with various organizations which represent these groups and their health care providers.

Progress toward the elimination of tuberculosis should be evaluated annually. Tuberculosis advisory committees should be formed in most states and major metropolitan areas for this purpose. These evaluations should include an analysis of morbidity and mortality data, case reporting, casefinding, treatment, and prevention activities that must be done in collaboration with interested constituencies, such as lung associations, minority organizations, professional societies, etc.

The committee brings this plan to the attention of the medical community and the public to stimulate positive and constructive discussion and action, to increase the level of tuberculosis awareness among all citizens, and to encourage a commitment toward the elimination of tuberculosis. In the past, the United States has spent hundreds of millions of dollars annually on tuberculosis control activities. Unless action is taken to carry out this plan, large and unnecessary expenditures will continue for several more generations. Expenditures on tuberculosis treatment may increase over the next few years because of high morbidity rates among persons infected with the human immunodeficiency virus, the homeless, the foreign-born, the elderly, and various minority groups. Furthermore, tuberculosis could break out of these enclaves and spread more widely in the community.

It is time to commit to a tuberculosis free society! The strategies for achieving elimination are set out in this document. Failure to attempt elimination of tuberculosis would be a tragedy. The task will not be an easy one; it will require considerable commitment at all levels. The challenge to carry out this plan is a test of our willingness and ability as a society to respond to a very serious health problem which disproportionately affects its "disenfranchised" members. A great Nation such as ours can carry out this plan. We are hopeful that it will do so. ■

Editor's Note: This report was developed by the Advisory Committee for Elimination of Tuberculosis in Collaboration with the Division of Tuberculosis Control Center for Prevention Services, Centers for Disease Control.

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Mycobacterial Infection and HIV Disease

Wm. Claiborne Dunagan, M.D.
St. Louis, Missouri

Mycobacteria infections are a common cause of morbidity among patients infected with the human immunodeficiency virus (HIV). The author presents an overview of the most common infections and suggests several treatment options and drug regimens.

Mycobacteria are a common cause of disease among patients infected with the human immunodeficiency virus (HIV). While many mycobacterial species have been reported to cause infections in such patients, the two most important are *Mycobacterium tuberculosis* and organisms belonging to the *Mycobacterium avium* complex (MAC).

Tuberculosis and Tuberculous Infection

Tuberculosis (TB) was identified in some of the first patients recognized as having AIDS, and there is now substantial epidemiological evidence that HIV infection is a risk factor for the development of TB. This risk, however, appears to be primarily a risk of reactivating latent infection, and there is little evidence that the risk of contracting primary TB is increased. Thus, TB is most common among HIV-infected patients who are also from population groups with a high incidence of tuberculous infection, including IV drug abusers, immigrants from countries with endemic TB, and poor, inner-city residents. That TB should complicate HIV infection is not surprising, but TB is distinguished from many other infectious complications of HIV disease in that it is transmissible, treatable, and potentially preventable.

Clinical Presentation

The diagnosis of TB in HIV-infected patients often precedes the development of other AIDS-defining illnesses. The clinical presentation is influenced by the degree of immunosuppression at the time of diagnosis. Pulmonary disease is still the most frequently encountered form of TB, especially when TB precedes the development of other AIDS-related infections. However, unusual presentations are frequent. Extrapulmonary disease may involve the lymph nodes, blood and bone marrow, urinary tract, liver, or CNS. Symptoms include fever, chills, night sweats, weight loss, and anorexia. Pulmonary TB is often difficult to distinguish from other pulmonary processes complicating HIV infection. The physical examination findings are typically nonspecific.

Diagnosis

HIV-positive individuals should be evaluated for tuberculous infection. Skin testing with 5 tuberculin units of purified protein derivative (PPD) should be performed, although false negative reactions are more frequent in the presence of declining immune competence. Any reaction greater than 5 mm should be considered evidence of tuberculous infection, and further evaluation for active TB performed. In addition, any HIV-infected patient with pulmonary or constitutional symptoms should be evaluated for possible TB with a chest radiograph and a careful examination for evidence of extrapulmonary disease, regardless of PPD skin test reactivity.

Chest radiography may reveal a variety of findings. Apical cavitary disease is less frequent than in other patients with TB, particularly if the HIV infection is advanced. Apical disease without cavitation or lower lobe disease is commonly seen. With more advanced HIV infection, diffuse pulmonary disease is more frequent and cavitation unusual. Mediastinal or hilar adenopathy is present in about one-fourth to one-third of patients and should suggest the diagnosis, as it is rarely associated with *Pneumocystis carinii* pneumonia.

Mycobacterial cultures are essential for diagnosis, as smear findings are often negative and biopsy specimens frequently do not reveal granulomas. In addition, MAC is indistinguishable from *M. tuberculosis* in smear preparations. Examination of respiratory secretions for mycobacteria should be performed in all HIV-infected patients with pulmonary symptoms or abnormalities on chest radiography. Acid fast bacilli seen on smears of sputum or bronchoscopic specimens should be presumed to be *M. tuberculosis* until proven otherwise. If smears are negative but TB is suspected, treatment should be initiated pending culture results. Aspiration and biopsy of potentially infected extrapulmonary sites is also appropriate, again recognizing that smears and pathologic studies may be negative even in the presence of infection.

Treatment

Most HIV-infected patients with TB respond well to standard antituberculous therapy, although the optimal duration of therapy remains uncertain. The currently recommended regimen for pulmonary and most extrapulmonary disease includes isoniazid (INH), 300 mg orally each day; rifampin, 600 mg daily by mouth; and pyrazinamide (PZA), 20-30 mg/kg orally each day. Ethambutol, 15 mg/kg per day by mouth, should also be given when INH resistance is suspected (e.g., in patients from regions where INH resistance is common) and is also recommended for disseminated or CNS disease. Pyrazinamide and ethambutol therapy can be discontinued after two months if the organism is sensitive to INH and the patient is responding well. Isoniazid and rifampin should be continued for a minimum of 9 months and for at least 6 months after three negative cultures. If INH or rifampin is not included in the treatment regimen, at least 18 months of therapy is recommended. Failure to respond to therapy should suggest the possibility of another disease process.

Monitoring toxicity due to antituberculous therapy may be difficult because of confounding abnormalities caused by other infections or medications. Whether HIV-infected patients have a higher incidence of side effects with antituberculous therapy has not been established.

Preventive Therapy

The effectiveness of preventive therapy in HIV-infected patients with evidence of tuberculous infection has not been proven. However, given the apparent efficacy of traditional antituberculous therapy, it is reasonable to assume that the standard regimen of oral INH, 300 mg a day, is adequate. The appropriate duration of prophylactic therapy is unknown. It should probably be continued at least 12 months; some investigators favor lifetime INH treatment in these patients. All HIV-infected patients with a PPD skin test reaction greater than 5 mm or a history of a reactive PPD skin test in the past should receive preventive therapy, regardless of age.

Public Health Measures

Contact investigation and infection control measures should be performed in the same manner for HIV-infected patients as they are for others with TB.

Mycobacterium avium Complex Infections

The *M. avium* complex consists of a group of ubiquitous soil- and waterborne mycobacteria that are seldom pathogenic in immunocompetent hosts. However, MAC organisms were among the first bacteria found to cause infection in patients with AIDS and are the most common cause of disseminated bacterial infection in these patients. Over half of all patients with AIDS have evidence of MAC infection at autopsy, although many of these infections were not recognized antemortem.

Clinical Presentation

MAC infection tends to occur late in the course of HIV disease. Symptoms are nonspecific and include fever, chills, night sweats, weight loss, abdominal pain, and diarrhea, all of which may be due to a variety of other processes in HIV-infected patients.

Diagnosis

MAC infection is suggested by isolation of MAC from any normally sterile body fluid or tissue. Culturing the blood using a lysis-centrifugation system combined with radiometric growth detection techniques is the most efficient method of diagnosing disseminated disease. When available, specimens from other potentially infected sites, such as the bone marrow or liver, should also be cultured for mycobacteria. The isolation of MAC from non-sterile sites is more difficult to interpret. However, MAC cultured from the stool usually represents disseminated disease, while isolation from urine or sputum is associated with a significant progression to disseminated disease.

Biopsy material from infected tissues may reveal acid-fast bacilli or granulomas, but there are no morphologic features that distinguish MAC from *M. tuberculosis* or other mycobacteria.

Treatment

No regimen has been clearly documented to be effective in the treatment of MAC infection. Therapeutic trials with a variety of multi-drug regimens have failed to show a significant reduction in morbidity or mortality in these patients. There are anecdotal reports of patients who appear to have improved with antimycobacterial therapy, and some cases have documented the clearance of bacteremia. A therapeutic trial may therefore be appropriate in symptomatic patients with adequate renal and hepatic function who are cooperative, can tolerate therapy, and are not in the terminal stages of AIDS.

The optimal therapeutic regimen has not been defined. There are also uncertainties about whether in vitro sensitivity data correlate with in vivo activity. Various regimens of drug therapy have been proposed, including clofazimine, ethambutol, amikacin, and rifabutin, an experimental agent available from the Centers for Disease Control (CDC).

These organisms typically appear resistant to INH and rifampin in in vitro testing. If a therapeutic trial is elected, a regimen such as amikacin, 7.5 mg/kg IM or IV every 12 hours; clofazimine, 50-100 mg daily by mouth; and ciprofloxacin, 750 mg by mouth twice a day, along with ethambutol and rifampin in standard dosages, is reasonable. Therapy should be continued for a minimum of four weeks to allow adequate time for a response. In those patients who appear to respond, discontinuation of treatment may result in relapse. Therefore, therapy should probably be continued indefinitely.

Other Mycobacterial Infections

There is no standard treatment for the various other reported, but uncommon, mycobacteria affecting HIV-infected patients. The American Thoracic Society and CDC recommend that infection due to *M. kansasii* be treated with INH, rifampin, and ethambutol in standard dosages for a minimum of 18 months and for 15 months after cultures become negative. Some clinicians recommend the addition of streptomycin, 1 gm IM twice a week for the first three months of therapy. Treatment of infections with other mycobacteria must be individualized and should be based on accepted regimens for such infections in other hosts, although more extended (perhaps lifetime) therapy will likely be required.

Suggested additional reading:

1. Chaisson RE, Slutkin G: Tuberculosis and human immunodeficiency virus infection. *J Infect Dis* 1989;159:96-100.
2. Young, LS: *Mycobacterium avium* complex infection. *J Infect Dis* 1988;157:863-867.
3. Centers for Disease Control: Tuberculosis and human immunodeficiency virus infection: Recommendations of the advisory committee for the elimination of tuberculosis (ACEDT). *MMWR*. 1989;38:236-250.
4. Selwyn PA, Hartel MPH, Lewis VA, et al: A prospective study of the risk of tuberculosis among intravenous drug users with human immunodeficiency virus infection. *NEJM* 1989;320:545-550.
5. American Thoracic Society/Centers for Disease Control: Mycobacterioses and the acquired immunodeficiency syndrome. *Am Rev Respir Dis* 1987;136:492-496.
6. Modilevsky TS, Sattler FR, Barnes PF: Mycobacterial disease in patients with human immunodeficiency virus infection. *Arch Intern Med* 1989;149:2201-2205.

The Author

WM. CLAIBORNE DUNAGAN, M.D.

Dr. Dunagan is from the Division of Infectious Diseases, Department of Medicine, and the AIDS Clinical Trials Unit, Washington University School of Medicine, St. Louis, Mo.

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Reprints not available.

SPECIAL SERIES: Chronic Disease Reports

Cancer Control and Public Health in Missouri: A Time For Action

James R. Davis, M.S., Ross C. Brownson, Ph.D.,
Sherri G. Simms, M.S.N., R.N., C., and Thomas G. Kern, M.S.
Columbia, Missouri

National reports on cancer mortality now show that most cancer deaths are preventable. The recent national focus on prevention of such chronic diseases may indicate that public health departments need to consider a shift in emphasis from infectious to chronic disease control.

Cancer is the second leading cause of mortality in Missouri, accounting for 10,913 deaths in 1988.[1] Cancer mortality rates are currently increasing while rates for other major causes of death are decreasing.[1] These facts are in stark contrast to the situation in the late nineteenth and early twentieth century, when infectious diseases were the major killers and public health departments focused mainly on sanitation and infectious disease control.[2] For many important and compelling reasons, public health departments in Missouri are still primarily engaged in health programs that address these issues (e.g., sanitation, communicable disease control, and maternal and child health).[2] The recent national focus on prevention of chronic diseases in the Year 2000 Objectives for the Nation[3] and Model Standards[4] for public health departments has suggested there is a need for a shift in emphasis from infectious to chronic disease control.

The growing awareness of the role that public health departments can play in preventing chronic diseases is fueled by national reports that find most cancer deaths are preventable.[5] The National Cancer Institute (NCI) estimates that more than 30% of cancer deaths are caused by cigarette smoking, the major preventable cause of illness and premature death in the nation.[5,6] The NCI also identifies other modifiable risk factors, such as diet and sun exposure, as significant preventable causes of cancer mortality in the United States. Screening for early detection of cancer has also proven effective in preventing cancer deaths.[5]

Local public health departments are ideally suited to implement risk reduction and screening programs.[7] A major section of the Missouri Cancer Control Plan focuses on the vital leadership role that Missouri's 112 local health departments can play in reducing cancer mortality in the state.[8] Specific objectives and recommendations for cancer control in local health departments are also outlined in the Plan.

This article presents the results of a baseline assessment of cancer control knowledge and activity lev-

Table 1.
A Comparison of Traditional and Cancer Control Activity Levels in Missouri Local Health Departments — 1988.

Activity	Activity Score*	Activity Level
Five Most Common Services Provided	3.29	High-VeryHigh
Dietary Education or Counseling	2.53	Medium-High
Tobacco Cessation Counseling	1.47	Low-Medium
Cancer Screening	1.41	Low-Medium
Referrals to Smoking Cessation Programs	0.93	Low

** The method for calculating activity scores is explained in the methods section of the article.*

els in local public health departments in Missouri. It also presents information on the methods and staff that are used to implement cancer control services for patients in local health departments.

Methods

As part of a larger cancer control project, the Missouri Department of Health conducted a survey of local health department cancer control activities in the spring of 1988. The three page mailed survey included 13 questions with a total of 44 response items. The questionnaire included both closed and open ended questions. The majority of the questions involved comparisons between response options. Others simply requested information on current cancer control methods used in local health departments.

To assess the relative importance of cancer control in local health departments, respondents were asked to list the three most important health care services provided by the health department. They were also asked to indicate their department's level of activity in these three services and four specific cancer control related services (Table 1). Level of activity was indicated by circling "none," "low," "medium," "high," or "very high." An activity score was obtained by assigning zero points to "none," one point to "low," two points to "medium," three points to "high," and four points to "very high," and then dividing the total by the number of respondents for each item. The same procedure was used to determine the activity scores on cancer screening services shown in figure 1.

Two separate mailings of the survey achieved nearly an 80% response rate. The survey questionnaires were completed primarily by local health department administrators or community health nurses.

Results

Local health department administrators and nurses exhibited a basic knowledge of the primary risk factors associated with cancer. Respondents were asked to indicate the level that each of eight risk factors contributes to causing cancer. Tobacco use was identified as a very high to high contributor to cancer. Sun exposure, genetics or family history, radiation exposure, diet, occupational exposure, and alcohol consumption were identified as high to medium contributors. Sexual activity was thought to be a medium to low contributor.

Assessment of activity levels in local health departments revealed that cancer control is not a major activity. The five most important health care services identified by the respondents were, in order of importance, child health conference or women, infant and children (WIC) programs; immunization programs; sexually transmitted disease programs; home visits; and prenatal care programs. The mean weighted activity score for these five health care services combined was 3.29 (Table 1). This indicates a very high to high level of activity for these services in local health departments. Table 1 also shows the calculated activity scores for cancer control related services in local health departments. Dietary education showed high to medium levels of activity. Tobacco cessation counseling and cancer screening showed medium to low levels of activity and referral to external smoking cessation programs revealed low levels of activity.

A more detailed examination of cancer screening activity levels revealed a relatively strong emphasis on breast and cervical cancer screening (Fig 1). The Papanicolaou Test was the most commonly used cancer screening method in local health departments. Respondents indicated a medium level of activity for the Pap test (activity score (AS) = 1.98). Mammography units are not currently available to local health departments in Missouri and estimates of mammography referrals are unreliable. The major breast cancer screening method used in local health departments is breast physical examination by a nurse or physician. Respondents reported a medium level of activity in breast

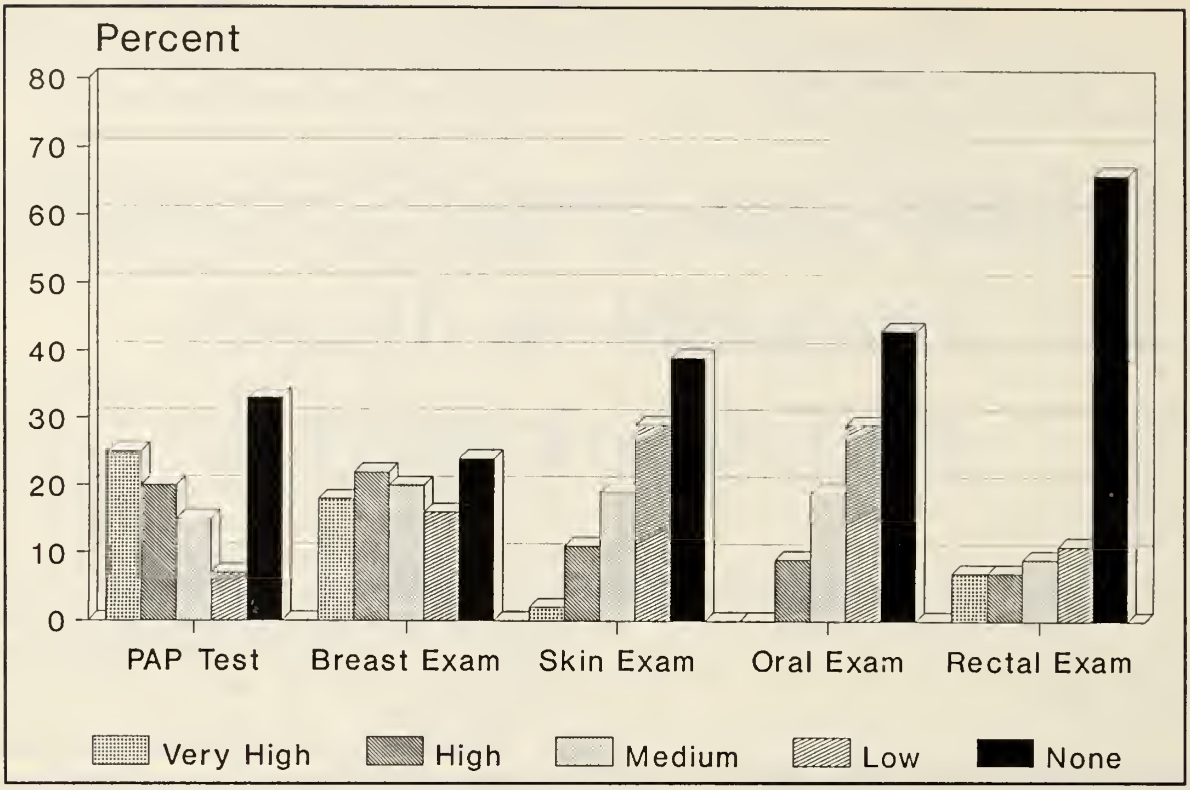

Fig. 1. Levels of Cancer Screening Activities in Missouri Local Health Departments — 1988.

physical examination (AS = 1.96). Skin examination (AS = 1.11), oral cavity examination (AS = 0.95), and digital rectal examination (AS = 0.85) were all reported at low levels in Missouri local health departments.

The survey indicated that a range of methods are used to provide cancer control education in local health departments. Ninety-one percent of the respondents identified patient self selection of written materials (e.g., pamphlets) as a method of cancer control education. Only 50% of the health departments distribute self-help manuals to patients. Seventy-five percent of the health departments provide individualized counseling on cancer control issues. Counseling is provided primarily by nurses (75% of the departments) and physicians (24% of the departments). However, health educators, dieticians, and other health department staff also provide cancer control counseling to patients. Other methods of cancer control education include group presentations within the health departments, group presentations in community settings (e.g., worksites), and use of films and videos.

Discussion

This study demonstrates that local health departments in Missouri currently allocate relatively few resources to cancer control activities. Their primary emphasis is on preventive services for children and responses to potential and actual infectious disease outbreaks. Medium to low attention is given to cancer screening and tobacco use reduction, the two most effective methods currently known for preventing cancer deaths. Dietary education and counseling is a priority of local health departments, but this activity is primarily associated with child and maternal health programs.

Cancer screening in local health departments tends to focus on the more common sites of breast and cervical cancer. The local health department emphasis on breast physical examination and Pap tests is supported by national priorities outlined by the National Cancer Institute and the American Cancer Society.[5,9] Very few health departments are regularly performing skin, oral, and digital rectal examinations. Each of these examinations is easy to perform and could be integrated into the services provided to patients during regular health department visits.

Where tobacco use reduction activities are conducted, they largely consist of information transfer in the form of pamphlets or brief counseling messages. These methods are often ineffective in promoting and supporting smoking cessation and long term maintenance among patients. Effective smoking cessation programs require a more comprehensive approach and greater time commitment by health professionals.[6]

They should include regular monitoring of patient smoking status, frequent counseling, distribution of self-help materials, and referrals to external smoking cessation programs. It is particularly important for local health departments to coordinate their smoking cessation efforts with external providers that have the resources for in-depth smoking cessation programs.

Unfortunately, most local health departments do not have the resources or flexibility to increase their emphasis on cancer control. Local health departments are severely underfunded in Missouri. Rural health departments have an average of 7.5 full-time staff, including secretarial support. Many of the funds available to local health departments are designated for services specifically addressing child health and infectious diseases. The traditional role of local health departments has been further reinforced by public expectations for these services and limited training opportunities in chronic disease control areas. Some local departments have become the only source of primary health care for many of Missouri's poor. Cancer control must compete with the more immediate issues of child health, infectious diseases, and other primary health care services. There are few resources left over to address major, but long-term health issues like cancer and other chronic diseases.

Conclusion

Cancer control is part of the public health mission.[2] Local health departments could be playing a major leadership role in preventing cancer deaths in Missouri. They can be one of the most effective settings for controlling cancer in the state. Additional funding is needed to increase the overall capacity of local health departments and to enhance existing cancer control programs. The Missouri public needs to be educated on the impact of cancer in the state and the important role that public health could play in reducing cancer deaths. Local health departments also need to examine their current programs to identify opportunities for enhancing cancer control activities. Cancer control needs to become one of the many priorities being addressed by local health departments in Missouri.

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The Authors

JAMES R. DAVIS, M.S.
ROSS C. BROWNSON, Ph.D.
SHERRI G. SIMMS, M.S.N., R.N., C.
THOMAS G. KERN, M.S.

The authors, with the exception of Mr. Kern, are from the Missouri Department of Health. Dr. Brownson is director of the Division of Chronic Disease Prevention and Health Promotion, Mr. Davis is chief of the Bureau of Smoking, Tobacco and Cancer and Ms. Simms is also from the Bureau of Smoking, Tobacco and Cancer. Mr. Kern is with the Department of Psychology at the University of Missouri-Columbia.

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Reprints

James R. Davis, M.S.
Bureau of Smoking, Tobacco and Cancer
Missouri Department of Health
201 Business Loop 70 West
Columbia, Missouri 65203

Lyme Carditis

Severe Conduction Disorder

Jhulan Mukharji, M.D.
Kansas City, Missouri
John DiGrazia, M.D., David Galetto, M.D., and George W. Vetrovec, M.D.
Richmond, Virginia

Lyme disease in most cases occurs in the states of Connecticut, Wisconsin, Oregon, California, Missouri and parts of the northeastern coast. Showing the exception to the rule, the authors discuss a case in which a patient acquired the disease on the Eastern Shore of Virginia.

The pioneering efforts of Steere and co-workers[1,2] has led to the understanding of Lyme disease as a multisystem inflammatory disorder caused by the spirochete *Borrelia burgdorferi,* which is transmitted to humans by the tick *Ixodes dammini.* The disease occurs in summer and early fall, and appears to be confined to the states of Connecticut, Wisconsin, Oregon, California, Missouri, and parts of the northeastern coast (Massachusetts to Maryland). A unique and characteristic skin lesion, erythema chronicam migrans, heralds the onset of the illness. Intermittent arthritis develops in 60% of patients, while neurologic and cardiac involvement is seen in 15% and 8% of patients, respectively. The patient we discuss is unusual because he developed the disease on the Eastern Shore of Virginia, then developed complete heart block, associated with an unstable, wide complex escape ventricular rhythm.

Case Report

The patient was a 39-year-old, active caucasian man from the Eastern Shore of Virginia, who described four weeks of intermittent myalgias, headaches, fevers and malaise following a tick bite in late October. He had no history of recent travel, hunting, or exposure to pets. The patient consulted a physician in November with additional complaints of profound weakness and near syncope. Complete heart block was noted with a wide complex escape rhythm at a rate of 24 beats/min. A temporary pacing wire was placed, and the patient was transferred to the Medical College of Virginia. Examination revealed a pacemaker-dependent heart rhythm, low grade fever (100.2°F), and multiple erythematous, flat skin lesions with central clearing and serpiginous borders, measuring up to 10 cm by 5 cm on his trunk and thighs. The WBC count was 950/dL, with 73 segmented and 13 band forms; the hematocrit was 39.6 and the ESR was 29 mm/hr. Electrolytes were normal. The EKG revealed complete heart block with an atrial rate of 110 beats/min and a ventricular (wide complex) rate of 30 beats/min. The heart block did not respond to the administration of intravenous atropine. A skin biopsy revealed dermal hemorrhage. Tetracycline (500 mg, four times daily) was given, and the skin lesions resolved in three days. The fever persisted, and mild nuchal rigidity was noted. Lumbar puncture revealed clear fluid, total protein 38 mg/dL, glucose 62 mg/dL, 14 WBC/hpf (9 lymphocytes, 3 polymorphonuclearleucocytes), no RBCs, with negative findings on India ink and gram stain. A CT scan of the head was normal. Tetracycline was stopped and aspirin and intravenous penicillin (3 million units every 6 hours) were given after Rocky Mountain spotted fever titers (latex agglutination test) were reported as normal. A two-dimensional echocardiogram indicated possible right ventricular dilatation, and a gated blood pool cardiac scintigram was read as abnormal, with evidence of segmental left ventricular wall motion abnormalities. Toxoplasma IgN titers were reported as positive, whereas IgG titers were less than 1:16. Cultures of CSF, blood and urine were all negative. Presumptive diagnoses of sarcoidosis or Lyme disease were considered, and steroids were withheld upon the advice of infectious disease consultants, who were concerned about the positive toxoplasma titers. Cardiac catheterization performed on the fourth day because of apparent segmental LV dysfunction showed normal results. However, for the first time during hospitalization the patient's heartbeat briefly reverted to a narrow complex junctional escape rhythm in the catheterization laboratory. Tentative plans for the placement of a permanent pacemaker were cancelled.

Over the ensuing week, intermittent periods of second-degree AV block occurred. Eventually, the patient developed a stable sinus rhythm with a first-degree AV block, and temporary pacing was finally discontinued. Details of relevant tests are summarized as follows: antinuclear antibody — negative; cold and febrile agglutinins — negative; thyroid function test — normal; infectious mononucleosis battery — negative; FTA-ABS and RPR — non-reactive; cryptococcal antigen (CSF) — negative; coxsackie B titer — normal; ACE — normal. Acute and convalescent sera and CSF samples were sent to the Centers for Disease Control in Atlanta for enzyme-linked immunoabsorbant assay for *B. burgdorferi* antigen. The initial serum and CSF samples were negative (ELISA OD ratio 0.14 and 0.01), while two subsequent convalescent serum samples were strongly positive (0.31 and 0.36), established the diagnosis of Lyme disease. The patient was finally discharged after 12 days of hospitalization and was given oral penicillin to complete two weeks of therapy. He has continued to do well with no evidence of recurrent cardiac involvement, although he did develop transient arthralgias in the shoulder about a month after discharge.

Discussion

Extensive epidemiologic studies suggest that there are three fairly well demarcated geographical areas where Lyme disease is found,[2] the Northeast coast (from Massachusetts to Maryland), the West (California and Oregon), and the Midwest (Wisconsin and Minnesota). The patient described in this report is therefore somewhat unusual in having contracted the disease in a non-endemic area. To our knowledge, this represents the first case of Lyme disease from the state of Virginia reported in the medical literature. However, seven confirmed cases of Lyme disease have been reported to the Virginia State Office of Epidemiology since 1982. Three patients had a history of travel to an endemic area, and two additional patients (not included in the seven) were reported as having had erythema chronicum migrans in 1982, but were not serologically confirmed because such tests were not widely available at the time. Therefore, there are at least four and possibly six patients in addition to the one described in this report who were infected in Virginia. Although this does not represent an overwhelming rate of disease occurrence, we feel it is important to include Lyme disease in the differential diagnosis, even in areas considered relatively free of the disease. Major organ system involvement makes the consideration of Lyme disease even more important. We also note that our case report involves the important and unusual occurrence of complete heart block with an idioventricular wide complex escape rhythm.

Conduction abnormalities (primarily AV block) constitute the most common cardiac manifestation of Lyme disease although only 8% of patients have cardiac involvement.[2] In the majority of cases, the block is supra-His. In the largest study of patients with Lyme carditis, reported by Steere et al[3], all 18 patients with fluctuating degrees of AV block had narrow QRS complexes. Two patients underwent electrophysiologic testing, confirming the supra-His location of the block. To our knowledge, there have been only three previous reports of Lyme carditis[4-6] in patients who had complete heart block and a wide complex idioventricular escape rhythm, suggesting extensive infra-His involvement of the conduction system. All three patients received steroid therapy with resolution of the conduction abnormality in about a week. Reznick and associates[4] were able to document His bundle involvement by electrophysiologic techniques. Our patient is unusual in this respect. This report also represents the first description of the evolution of an extensive conduction system disorder in Lyme carditis without the modifying influence of steroid therapy.

The presence of complete heart block with an unstable idioventricular escape rhythm is a traditionally accepted indication for permanent pacemaker placement in adults.[7] It is therefore important to recognize Lyme carditis as an exception to this rule, since even extensive, infra-His blocks appear to be self-limited in this disease, irrespective of anti-inflammatory therapy. Suspected Lyme carditis warrants stabilizing with temporary pacing support and other maneuvers for extended periods of time, and waiting for the recovery which almost invariably follows.

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The Authors

JHULAN MUKHARJI, M.D.
JOHN DIGRAZIA, M.D.
DAVID GALETTO, M.D.
GEORGE W. VETROVEC, M.D.

The authors are from the Department of Medicine, Medical College of Virginia, Virginia Commonwealth University, Richmond, Va., and Clinical Cardiovascular Associates, Kansas City, Mo.

Reprints

Jhulan Mukharji, M.D.
Clinical Cardiovascular Associates
2900 Baltimore, Suite 340
Kansas City, Missouri 64108

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All-terrain Vehicle Injuries in Central Missouri

Sarvam TerKonda, M.D.
Rochester, Minnesota
Michael Greene, M.D.
Louisville, Kentucky
Michael Metzler, M.D.
Columbia, Missouri

Leisure time all-terrain vehicle (ATV) use and injuries are increasing. The authors characterize the riding habits and injury patterns of patients hospitalized for ATV-related trauma and offer suggestions for decreasing ATV injuries.

In 1982, large scale marketing of three-wheeled all-terrain vehicles (ATVs) began in the United States. By 1986, there were an estimated 2.4 million three- and four-wheeled vehicles in use. The Consumer Products Safety Commission (CPSC) has maintained detailed surveillance of injuries and deaths attributed to ATVs. In 1982, there were 8,600 such injuries nationwide. This number increased to 77,400 by 1987. There have been more than 1,100 deaths since 1982; in 1987 alone, there were 264. Missouri ranks 15th in ATV-related deaths.[1]

Methods

We characterized the injuries, possible contributing factors, and the riding habits of patients referred to our institution for treatment of ATV-related injuries. We also studied national recreational ATV injury data and compared them with data on ATV injuries to National Parks Service (NPS) employees who use ATVs in their daily work.[2] Patients referred to the University of Missouri-Columbia Level I Trauma Center, between January 1982 and June 1988, were studied. Only hospitalized patients were included. We sent detailed questionnaires to all survivors asking questions about events that could have contributed to the accident, the type of protective gear worn, their riding experience, and how their injuries have affected their lives. We reviewed the charts of 67 patients hospitalized for treatment of ATV-related injuries; 49 follow-up questionnaires were returned.

Results

Sixty-seven patients suffered 97 major injuries. Forty-five percent required treatment in the intensive care unit, and 70% required operations. Figure 1 shows the location of injuries. Torso injury was infrequent (10%) compared with injuries to an extremity (47%), and to the head, neck, and spine (43%). It is possible, however, that patients with isolated torso injuries were less likely to be referred to our center than those with injuries to extremities, head, neck, and spine. Table 1 shows the information obtained from the questionnaire.

The most common mechanisms of injury reported were loss of vehicle control, striking an object (or being struck), and flipping the vehicle over. Ve-

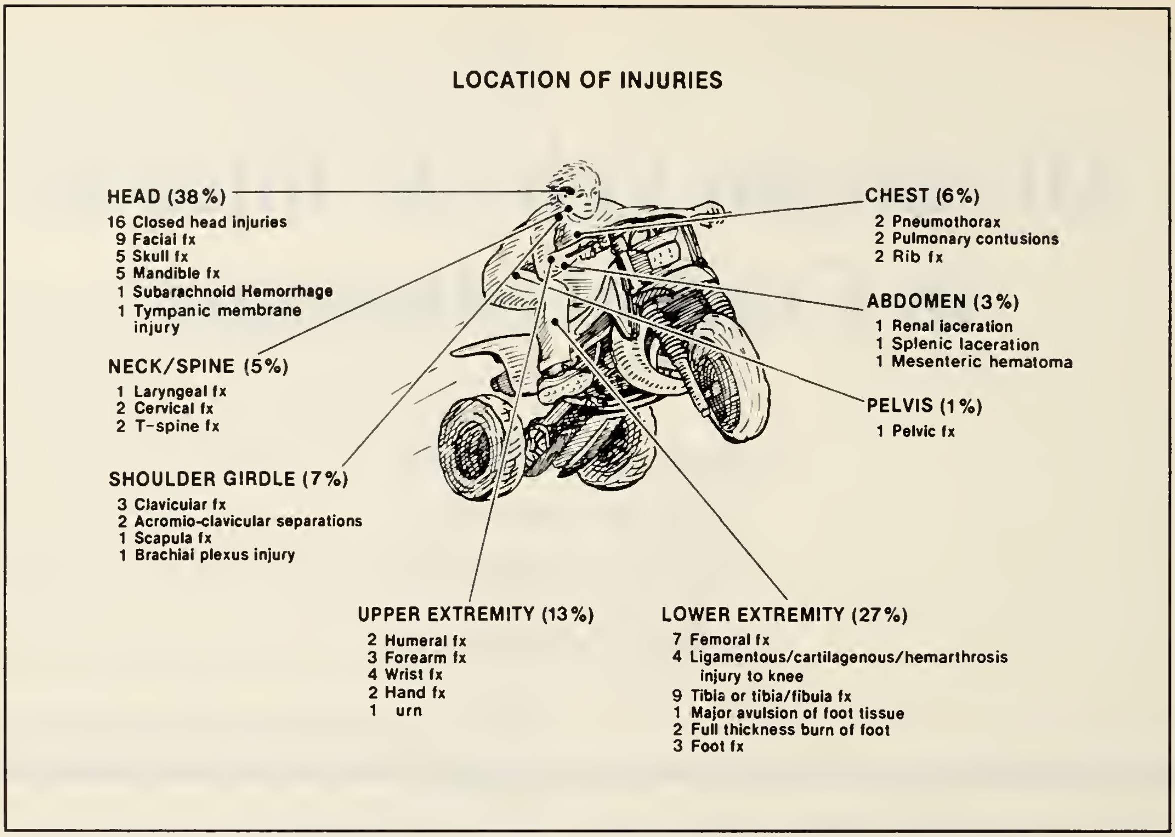
LOCATION OF INJURIES
HEAD (38%)
16 Closed head injuries
9 Facial fx
5 Skull fx
5 Mandible fx
1 Subarachnoid Hemorrhage
1 Tympanic membrane injury
NECK/SPINE (5%)
1 Laryngeal fx
2 Cervical fx
2 T-spine fx
SHOULDER GIRDLE (7%)
3 Clavicular fx
2 Acromio-clavicular separations
1 Scapula fx
1 Brachial plexus injury
UPPER EXTREMITY (13%)
2 Humeral fx
3 Forearm fx
4 Wrist fx
2 Hand fx
1 urn
LOWER EXTREMITY (27%)
7 Femoral fx
4 Ligamentous/cartilagenous/hemarthrosis injury to knee
9 Tibia or tibia/fibula fx
1 Major avulsion of foot tissue
2 Full thickness burn of foot
3 Foot fx
CHEST (6%)
2 Pneumothorax
2 Pulmonary contusions
2 Rib fx
ABDOMEN (3%)
1 Renal laceration
1 Splenic laceration
1 Mesenteric hematoma
PELVIS (1%)
1 Pelvic fx

Fig 1. Location of injuries of 67 hospitalized patients included in the study.

hicle flipping was associated with acceleration on wet terrain, excessive speed on cresting a hill, and striking an object on flat ground while traveling at a high rate of speed. Injuries caused when an extremity became caught under a vehicle wheel were associated with the carrying of a passenger. One of these passengers, who was pulled from the vehicle in such a manner, suffered a fatal head injury.

Male riders were more frequently injured than females. The patients' ages ranged from children to middle-age adults, with the mean for both men and women in the early 20s. About one-third used helmets. None of this group sustained head injury; however, some patients wearing open-faced helmets sustained facial injuries. Fewer than one in five patients admitted to alcohol use prior to the accident. Most accidents occurred on dirt, grass, or gravel; the majority occurred at speeds less than 16 miles per hour. There were two fatalities due to head injury, and two spinal injuries resulted in paraplegia. The average length of hospitalization was 10.9 days (range, 1-86 days), and the average cost of the hospital stay was $10,530. Forty-six percent of questionnaire respondents reported that the residual effects of their injuries significantly interfered with the performance of their jobs or activities of daily living, over one year post-accident.

The CPSC has long contended that ATVs are inherently more dangerous than other off-road vehicles. Their data show the accident rate per 1,000 vehicles to be significantly greater for ATVs, compared with minibikes and snowmobiles (Table 2).[3]

It is difficult to separate the inherent dangers of a vehicle from the way it is used. Data from the CPSC also show that 46% of ATV-related deaths occur in individuals less than 16 years old; 22% in children less than 12 years old. The risk of ATV accidents, related to age of driver alone, shows that an inexperienced 10-year-old has about a 20% risk of ATV injury. This risk drops to 0.2% for an experienced 40-year-old.[4] We note that ATVs are frequently driven by children.

We looked at injury data from the NPS from 1983 to 1987.[2] The NPS uses ATVs and snowmobiles in their routine work activities. They also conduct extensive training programs for drivers of the vehicles. These data (Table 2) show substantially lower injury rates for both ATVs and snowmobiles, compared with recreational users, pointing to the benefit of driver education and maturity.

Discussion

Our study shows that significant injuries can be caused by ATV riding. The majority of injuries we treated occurred at speeds below 16 miles per hour. This was surprising to us, but is confirmed by national data.[5] It appears that the use of safety equipment (hel-

Table 1
Characteristics of ATV Injuries*

	# of Pts	Percent	Avg Age
Males	55	82	20.1 yrs
Females	12	18	22.0 yrs

Helmet used	31% YES	69% NO
Prior ETOH	18% YES	82% NO

Terrain Involved —
47% Dirt/grass 33% Gravel 14% Asphalt 6% Other

	0-15mph	16-25mph	>26mph
Estimated speed at time of injury	57%	20%	23%

	# Days	Avg Cost
Average Length of hospitalization	10.9	$10,530

Residuals of injury affecting daily lives > 1 year later	46% YES	54% NO

* See text for further explanation.

Table 2
Risk of Injury for ATVs Compared with Other Off-Road Vehicles (per 1000 vehicles)

	Injuries	Hospitalizations
ATVS	37 {22.3}	5.0
Minibikes	23.8	1.59
Snowmobiles	12.7 {5.3}	0.79

Data from the U.S. Consumer Product Safety Commission. Data in { } show similar figures from ATV and snowmobile injuries reported by the National Parks Service.

mets, face guards, riding boots, gloves, and leg protection) could have a significant effect in reducing these low-velocity injuries. Although fewer than 20% of our patients admitted to alcohol use prior to the accident, there are good data showing that even small amounts of alcohol can impede judgment and should not be consumed when driving ATVs.[6]

Lack of vehicle knowledge and mature judgment are considered key factors in ATV injuries. We urge all ATV enthusiasts to take the time to become familiar with the operation and limitations of their vehicles. We also believe that children should not be allowed to drive ATVs because they lack the judgment necessary to cope successfully with the new situations encountered while riding. We also agree with the Specialty Vehicle Institute of America's recommendation that ATV riders not carry passengers.

No vehicle can be made completely safe under all circumstances. Nevertheless, the risk of injury can be minimized by vehicle familiarity, and the use of protective equipment and good judgment.

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The Authors

SARVAM TERKONDA, M.D.
MICHAEL GREENE, M.D.
MICHAEL METZLER, M.D.

Dr. TerKonda is from the Department of Surgery, Mayo Clinics, Rochester, Minn. Dr. Greene is from the Department of Surgery, University of Louisville, Louisville, Ky. Dr. Metzler is from the Department of Surgery, University of Missouri-Columbia School of Medicine.

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Michael H. Metzler, M.D.
Department of Surgery
N307A Health Sciences Center
University of Missouri-Columbia
1 Hospital Drive
Columbia, Missouri 65212

Obstetric Care in Rural Missouri:

The Loss of Rural General and Family Practitioners

Steven Zweig, M.D., M.S.P.H., Harold A. Williamson, Jr., M.D., M.S.P.H., Larry Lawhorne, M.D., Michael Hosokawa, Ed.D., Dean Ellis and Jane Taylor
Columbia, Missouri

Family and general practitioners have historically provided a substantial portion of obstetric care in rural parts of the United States, including Missouri. The authors surveyed 328 rural general physicians to determine their participation in obstetrics. Their findings show a dramatic loss of physician obstetric services in rural Missouri and suggest that the dilemma is not likely to be easily remedied.

Family and general practitioners have provided the bulk of rural obstetric care in the United States. In the state of Washington, for example, family and general practitioners delivered 64% of the babies born to women from rural or semi-rural areas.[1] During 1984, family and general practitioners comprised 74% of physicians in rural Missouri who were delivering 20 babies or more per year.[2] Most of these births occurred in small rural hospitals with less than 500 deliveries per year.

In Missouri, there are few alternative sources for obstetrical care in rural areas. There are very few obstetricians in rural Missouri and almost no certified nurse midwives. A recent Institute of Medicine study recommends that prenatal services should be "plentiful enough in a community to enable all women to secure appointments within two weeks with providers close to their homes."[3] The loss of general and family practitioners would preclude timely and continuous care in rural Missouri.

Family and general practitioners are quitting obstetric practice at a high rate. In 1985, 47.4% of the members of the American Academy of Family Physicians included obstetrics in their practices. A 1987 survey indicated only 34.8% continued to provide obstetric care.[4] Family and general practitioners in rural areas are dropping obstetric practice at a rate that is three times that of obstetrician-gynecologists.[5] Gordon and co-workers documented a 37% decrease in the number of rural family and general practitioners providing obstetric care in Arizona.[5] In Alabama, the proportion of family practitioners doing obstetrics fell from 77% in 1980 to 13.6% in 1986.[6] Similar declines have been noted in the states of Arizona,[7] Washington,[8] Ohio,[9] Florida,[10] Oregon,[11] and Michigan.[12]

We studied the obstetric practice patterns of rural general and family practitioners in order to describe the extent of the problem in rural Missouri.

Methods

The study population consisted of rural generalist physicians in Missouri who are providing or have recently discontinued providing obstetric care. This population was described by three sources of data. The names of physicians were obtained during our 1986 survey of rural hospital administrators and from recent surveys performed by the Missouri Academy of

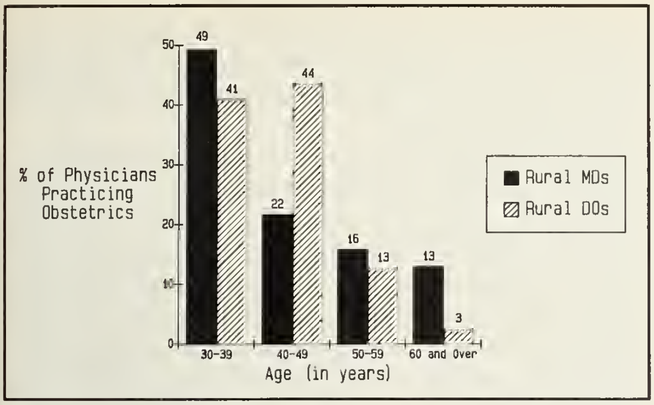

Fig 1. Age of rural generalist physicians practicing obstetrics

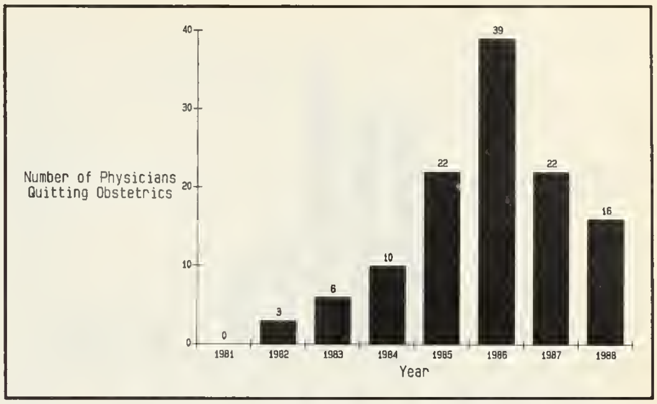

Fig 2. Number of rural generalist physicians quitting obstetrics

Family Physicians. The State Center for Health Statistics generated additional names from the review of birth certificate data for the years 1984 and 1987. Physicians residing in counties in the two major metropolitan areas were excluded (St. Louis, St. Louis County, St. Charles, Jackson and Cass Counties). In addition, physicians residing in other metropolitan areas of the state were excluded (Springfield, Joplin, Columbia, and Jefferson City).

Three hundred twenty-eight physicians received a letter during the summer of 1988 describing our interest in rural obstetrics and were requested to complete a brief mailback card that asked about past and current obstetrics practice and the number of deliveries performed. Ages of the physicians were obtained from the directories of the American Academy of Family Physicians and the American Osteopathic Association. Board certification status was obtained from the directory of the American Board of Family Practice.

Tests of statistical significance included chi-square to compare the distribution of dichotomous variables and t-tests to compare continuous variables.

Results

The study population consisted of 328 rural generalist physicians, of which 221 were M.D.s and 107 were D.O.s. One hundred forty-five (44%) were board-certified family physicians. Of the M.D.s, 64% were board-certified. Ages were available on 88% of the physicians.

The 268 physicians (82%) who responded to our brief questionnaire made up the sample. There were no differences between responders and non-responders on the distribution of professional degree, board certification, or age (49 years vs. 48 years, $p = .55$).

For the entire sample, there were slightly fewer physicians within each successive age grouping (30 to 39 years, 30%; 40 to 49 years, 27%; 50 to 59 years, 22%; 60 years or over, 21%). Figure 1 shows the age groupings of rural generalists continuing to practice obstetrics. As physicians become older, they are less likely to practice obstetrics. Compared with M.D.s, a greater percentage of D.O.s in the 40 to 49 age group have continued to deliver babies.

Equal percentages of osteopaths and allopaths were likely to practice obstetrics (40% and 38%, respectively). Among M.D.s only, those who were board-certified were more likely to deliver babies (45% vs. 23%, $p < .005$).

Figure 2 shows that the trend of rural generalists quitting obstetrics is a relatively recent one. The number quitting peaked in 1986, but the smaller numbers in 1987 and 1988 may reflect fewer doctors remaining to quit delivering babies. At the time of our survey, only 38.5% of rural generalists continued to provide obstetrical care. Only 14 of the physicians had never practiced obstetrics.

Figure 3 shows the number of deliveries performed by rural generalists during 1987. Most delivered fewer than 75 babies per year, with the modal category 50 to 75 deliveries.

Finally, we compared the number of generalist physicians delivering babies in 1984 with the number in 1988 for each Missouri Hospital Association region. Figure 4 shows a substantial loss of rural generalists practicing obstetrics in each of the five rural areas of Missouri. The percent decrease ranged from 27% in the central part of the state to 40% in the northeastern part of the state. This loss may be underestimated due to the death, retirement or migration of physicians practicing in the rural areas in 1984 who were not available to respond to our questionnaire in 1988.

Discussion

The loss of obstetric services provided by rural generalist physicians in Missouri reflects trends seen in other parts of the country. Allopathic and osteopathic physicians are quitting obstetric practice at

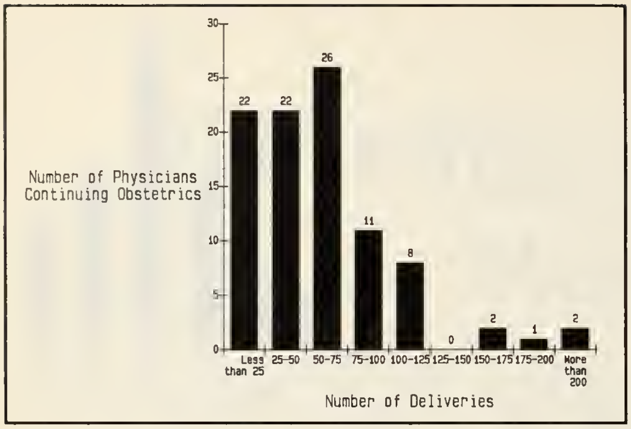

Fig 3. Number of deliveries by rural generalist physicians

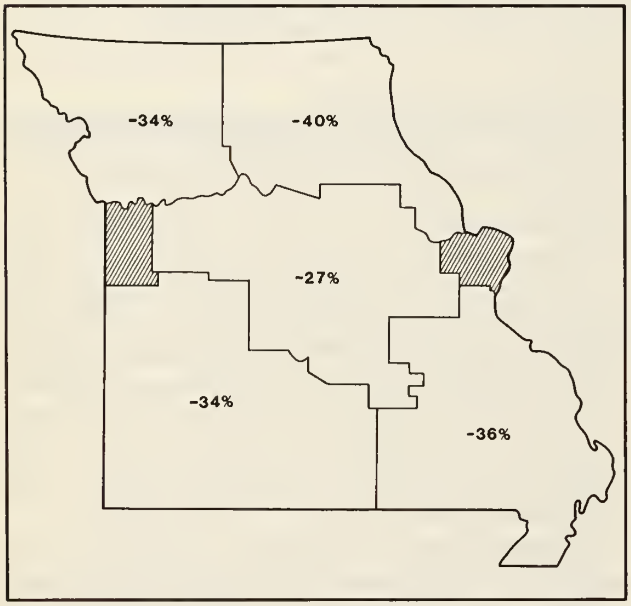

Fig 4. Percent loss of rural generalists practicing obstetrics: 1984 to 1988.

similar rates, with younger physicians in both groups and those who are board-certified in family practice more likely to continue providing obstetric care.

While professional liability concerns are frequently implicated in the decrease in the number of family and general practitioners doing obstetrics, other reasons such as physician age, personal and professional goals, coverage for time off, availability of consultation, and ease of referral to a larger hospital are also important.[4,8,10,13] Malpractice premiums in Missouri have increased dramatically in the past four years for those doctors practicing obstetrics. For example, the yearly malpractice premium for one of the leading insurers for a "mature family physician providing obstetric care" was $43,000 in 1988. Most rural physicians are not performing enough deliveries of fully insured patients to offset the cost of premiums of this magnitude. Unfortunately, there is evidence from other states that physicians currently graduating from family practice residencies are increasingly less likely to practice obstetrics.[14,15]

As a subsequent pilot study, we interviewed 30 Missouri generalist physicians about factors that discouraged or promoted obstetric practice. While the cost of malpractice premiums was frequently mentioned as a barrier, the fear of litigation seems to be at least equally important. Numerous other factors were mentioned as well, including an adversarial atmosphere (e.g., inappropriate patient expectations, an overregulated system, evaluation by other physicians), intrusions on lifestyle, loss of confidence, loss of partnership participation in obstetrics, and loss of specialty back-up coverage. Neither the physicians who quit nor those who continue to practice obstetrics seemed interested in providing prenatal care only, making this an unlikely solution to the problems of access in rural areas. Most physicians who continue practicing obstetrics do so in the context of group practice with shared call responsibilities. Many physicians cite commitment to their communities as a reason for continuing their obstetric practice.

The lost services of rural generalists is affecting the availability of hospital obstetric care in rural areas. In 1986, 10 of the 65 hospitals in rural Missouri previously providing obstetric care closed their obstetric units.[16] Meanwhile, the total number of deliveries to rural women (those residing outside metropolitan statistical areas) declined only 4.3% from 1984 through 1987 (23,748 vs. 22,729). It is unlikely that the number of obstetricians in rural areas will increase substantially to overcome the drop in family and general practitioners doing obstetrics. Over a three-year period from 1984 to 1987, the number of obstetricians residing in all rural areas of Missouri only increased from 48 to 52.[2]

Even under the best of circumstances, women living in rural areas are likely to have fewer obstetrical providers available, may have to travel longer distances for routine obstetric care, and often have insufficient insurance or economic resources to acquire care. Although Medicaid provides funding for a subset of these women, not all physicians participate in Medicaid, and others limit their participation.[3,17,18] In a recent survey by the Missouri Academy of Family Physicians, respondents reported providing a significant amount of care to indigent patients; 23% of their obstetric patients had Medicaid coverage, and an additional 12% paid nothing for physician services.[19] In a previous study of a cohort of women from a rural Missouri county, we found that local obstetric services provided by general and family practitioners were most likely to be chosen by younger women and those of lower socioeconomic status.[20] Therefore, the loss of these physicians and the local hospital obstetric services is most likely to affect the already underserved.

Some might argue that the loss of rural generalists practicing obstetrics might be beneficial, as more babies might be born in technologically sophisticated regional centers. Studies of regionalization support improved systems of transport, preferably prior to delivery in high-risk situations, and greater skills in resuscitation for high-risk births that may occur unexpectedly in community hospital settings.[21,22] However, they do not support recommendations to cut off obstetric care in rural areas, recognizing the need for accessible and capable local care. Studies have consistently demonstrated the high quality of obstetric care provided by family physicians.[23-29] There is little doubt that loss of local generalist physicians will impede access to prenatal and delivery services for rural Missouri women.

Recognizing the importance of this problem, the state of Missouri has expanded Medicaid coverage and offered to supply malpractice coverage for physicians who provide prenatal care in county health departments. Whether these efforts will halt the loss of generalist physicians providing obstetric care remains to be seen. These and other solutions must be promoted if we hope to continue to have obstetric services available to rural Missouri women.

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The Authors

STEVEN ZWEIG, M.D., MSPH
HAROLD A. WILLIAMSON, JR., M.D., MSPH
LARRY LAWHORNE, M.D.
MICHAEL HOSOKAWA, ED.D.
DEAN ELLIS
JANE TAYLOR

The authors are from the Department of Family and Community Medicine, University of Missouri-Columbia School of Medicine.

Reprints

Steven Zweig, M.D.
Department of Family and Community Medicine
M228 Health Sciences Center
University of Missouri-Columbia School of Medicine
Columbia, Missouri 65212

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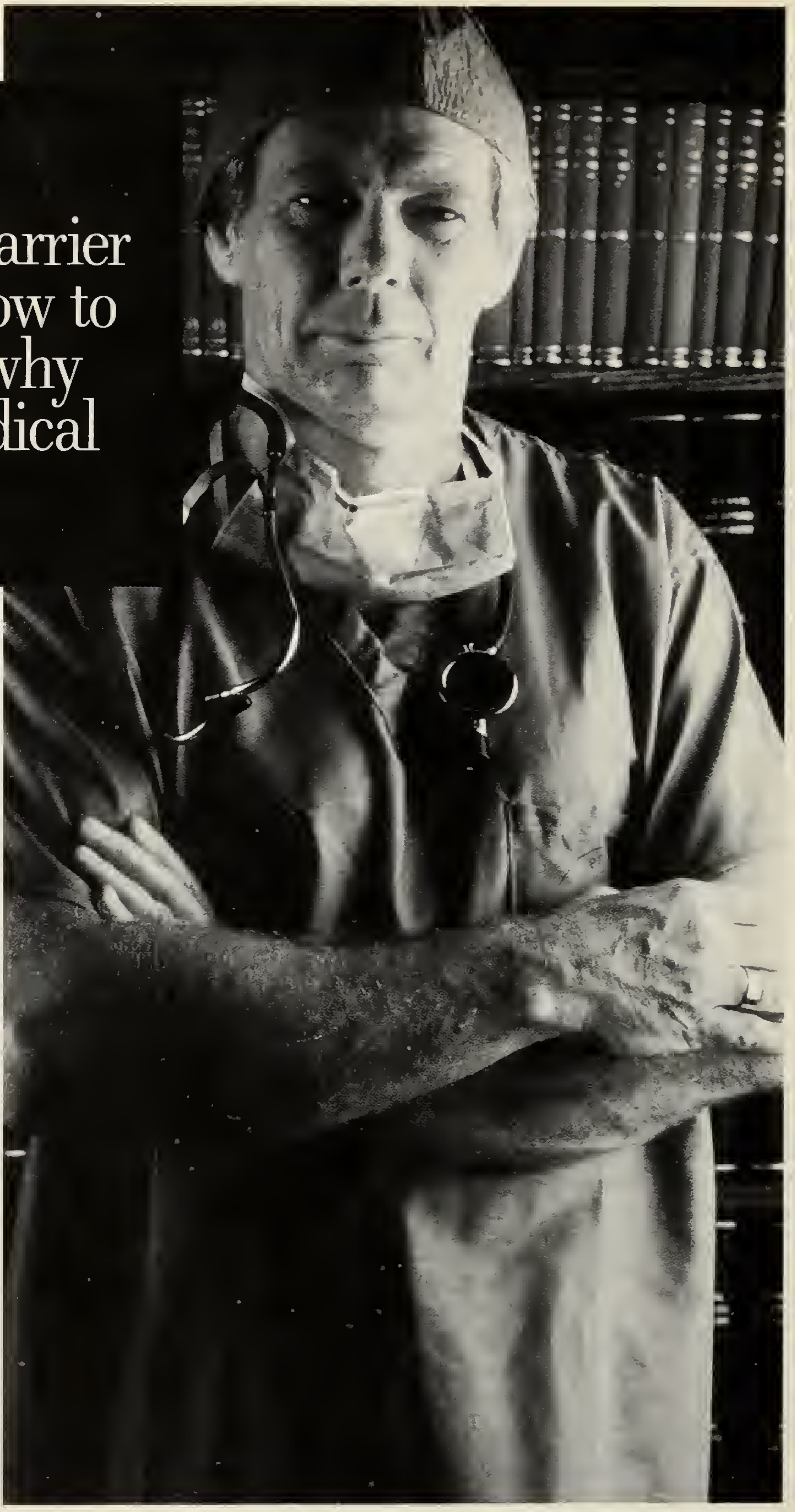

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February

1 - April 1 **31st Annual Postgraduate Institute For Pathologists in Clinical Cytopathology - Home Study Course A** — Location: Home Study Course offered by Johns Hopkins University School of Medicine, Baltimore, MD. Contact: John K. Frost, M.D., or Ms. Betty Ann Remley, 111 Pathology Bldg., Johns Hopkins Hospital, Baltimore, MD 21205. 301/955-8594.

6 - 8 **Introduction to Doppler Echocardiography** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: Anita Herbst, St. Louis University School of Medicine, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8167.

8 - 10 **10th Annual Conference on Peritoneal Dialysis** — Location: Loews Anatole Hotel, Dallas, Texas. Contact: Barry Kling, MU School of Medicine, Office of Continuing Education, MA215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

8 - 10 **Clinical Education In A Changing Health System: Who Pays?** — Location: Hotel Westcourt, Phoenix, Arizona. Contact: Ira Singer, Ph.D., AMA Medical Schools Section, 535 N. Dearborn Street, Chicago, IL 60610.

9 **Pediatrics: Neonatology** — Location: Research Medical Center, Kansas City, MO. Contact: Michelle J. Macek, R.N., The Ed Bixby Institute for Postgraduate Medical Education, Research Medical Center, 2316 E. Meyer Blvd., Kansas City, MO 64132. 1-816/276-4306.

10 - 11 **AIDS Update** — Location: Holiday Inn Westport, St. Louis, MO. Contact: Marilyn Porter, Metropolitan Medical Center Educational Institute, 530 Des Peres Road, Des Peres, MO 63131. 1-800-888-METRO

14 **Prostate Cancer** — Location: Jewish Hospital, St. Louis, MO. Contact: Alan P. Lyss, M.D., Jewish Hospital, 216 S. Kingshighway, P.O. Box 14109, St. Louis, MO 63178. 314/454-7000.

16 **Clinical Conference in Otolaryngology: Contemporary Laser Surgery** — Location: St. John's Mercy Medical Center, von Gontard Conference Center, St. Louis, MO. Contact: Anita Herbst, St. Louis University School of Medicine, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8167.

21 - 23 **Advanced Cardiac Life Support Provider Course** — Location: St. Louis University Learning Resources Center, St. Louis, MO. Contact: Anita Herbst, St. Louis University School of Medicine, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8167.

23 - 25 **Current Clinical Applications of Cardiac Ultrasound** — Location: Vail, Colorado (location pending). Contact: Anita Herbst, St. Louis University School of Medicine, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8167.

28 **Update in Surgery: The Joseph E. Flynn Lecture** — Location: von Gontard Conference Center, St. John's Mercy Medical Center, St. Louis, MO. Contact: Judith L. O'Guin, St. John's Mercy Medical Center, 615 South New Ballas Road, St. Louis, MO 63141. 314/569-6290.

March

2 **Concepts of Supportive Cancer Care** — Location: St. Luke's Hospital Institute for Health Education, St. Louis, MO. Contact: Laura Klaus, Director of Professional Education, American Cancer Society, 1280 Research Blvd., St. Louis, MO 63132. 314/567-9730 or 1-800-727-0395.

2 **Preceptors Day** — Location: School of Medicine, Columbia, MO. Contact: Barry Kling, MU School of Medicine, Office of Continuing Education, MA215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

2 - 4 **Organizational Systems** — Location: University of Missouri, Columbia, MO. Contact: Barry Kling, MU School of Medicine, Office of Continuing Education, MA215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

3 - 4 **Family Practice Update** — Location: School of Medicine, Columbia, MO. Contact: Barry Kling, MU School of Medicine, Office of Continuing Education, MA215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

5 - May 21 **16th Annual Internal Medicine Review** — Location: The Jewish Hospital, Washington University Medical Center, St. Louis, MO. Contact: Cathy Caruso, Continuing Medical Education, Washington University School of Medicine, Box 8063, 660 South Euclid, St. Louis, MO 63110. 314/362-6893.

8 **Tobacco Conference 1990: A Forum for Professionals** — Location: Capitol Plaza Hotel, Jefferson City, MO. Contact: Monica H. Eischen, Missouri Department of Health, Division of Chronic Disease Prevention and Health Promotion, 201 Business Loop 70 West, Columbia, MO 65203 314/875-2218.

12 - 13 **Critical Care Update** — Location: Holiday Inn Executive Center, Columbia, MO. Contact: Barry Kling, Office of Continuing Education, MA215 Health Sciences Center, MU School of Medicine, Columbia, MO 65212. 314/882-4105.

14 **Update in Cardiology** — Location: von Gontard Conference Center, St. John's Mercy Medical Center, St. Louis, MO. Contact: Cathy Lawton, St. John's Mercy Medical Center, 615 South New Ballas Road, St. Louis, MO 63141. 314/569-6930

14 **4th Annual Management of Common Gastroenterological Problems** — Location: University of Kansas Medical Center, Kansas City, Kansas. Contact: Bernice Jackson, University of Kansas Medical Center, Office of Continuing Education, Rainbow and Olathe Blvds., Kansas City, KS 66103. 913/588-4490.

16 **Clinical Conference in Otolaryngology: Update in Neurotology** — Location: St. Louis University Learning Resources Center, St. Louis University Medical Center, 1402 S. Grand Blvd., St. Louis, MO 63104-1083. 314/577-8167.

16 **Eighth Annual Symposium on Geriatric Medicine** — Location: Breckenridge Inn Frontenac, St. Louis, MO. Contact: Anita Herbst, St. Louis University School of Medicine, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8167.

21 **Cancer of Unknown Primary Site** — Location: Jewish Hospital, St. Louis, MO. Contact: Alan P. Lyss, M.D., Jewish Hospital, 216 S. Kingshighway, P.O. Box 14109, St. Louis, MO 63178. 314/454-7000.

23 **What's New in Diabetes?** — Location: The Ritz-Carlton, Kansas City, MO. Contact: The Ed Bixby Institute for Postgraduate Medical Education, Research Medical Center, 2316 East Meyer Blvd., Kansas City, MO 64132. 816/276-4306.

23 - 24 **Advanced Trauma Life Support Provider Course** — Location: St. Louis University Learning Resources Center, St. Louis, MO. Contact: Mary Keegan, St. Louis University School of Medicine, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8365.

29 - 30 **Annual Pediatric Postgraduate Symposium** — Location: Westin Crown Center Hotel, Kansas City, MO. Contact: Bernice Jackson, University of Kansas Medical Center, Office of Continuing Education, Rainbow and Olathe Blvds., Kansas City, KS. 913/588-4490.

April

3 - 5 **Introduction to Doppler Echocardiography** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: Anita Herbst, St. Louis University School of Medicine, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8167.

5 - 6 **17th Annual Symposium on Obstetrics & Gynecology** — Location: Washington University Medical Center, St. Louis, MO. Contact: Cathy Caruso, Continuing Medical Education, Washington University School of Medicine, Box 8063, 660 South Euclid, St. Louis, MO 63110. 314/362-6893.

5 - 6 **Current Management in Critical Care** — Location: Ritz Carlton Hotel, Kansas City, MO. Contact: Linda F. Smutz, Kansas City Southwest Clinical Society, 7920 Ward Parkway, Suite 205, Kansas City, MO 64114. 816/523-3383.

5 - 7 **Advances in Ophthalmology** — Location: Embassy Suites Hotel, Country Club Plaza, Kansas City, MO. Contact: Bernice Jackson, University of Kansas Medical Center, Office of Continuing Education, Rainbow and Olathe Blvds., Kansas City, KS 66103. 913/588-4490.

6 - 8 **Microsurgery of the Lumbar and Cervical Spine** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: Anita Herbst, St. Louis University School of Medicine, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8167.

18 **New Imaging Modalities in Cancer Diagnosis** — Location: Jewish Hospital, St. Louis, MO. Contact: Alan P. Lyss, M.D., Jewish Hospital, 216 E. Kingshighway, P.O. Box 14109, St. Louis, MO 63178. 314/454-7000.

18 - 19 **15th Annual Family Practice Symposium**— Location: Ritz-Carlton Hotel, Kansas City, MO. Contact: Bernice Jackson, University of Kansas Medical Center, Office of Continuing Education, Rainbow and Olathe Blvds., Kansas City, KS 66103. 913/588-4490.

19 - 20 **The 21st Annual Matt Weis Symposium in OB/GYN** — Location: Breckenridge Frontenac Hotel, St. Louis, MO. Contact: Sandra Williams, St. John's Mercy Medical Center, 615 South New Ballas Road, St. Louis, MO 63141. 314/569-6880.

21 **New Directions in Cardiology: Update in Invasive & Non-Invasive Therapies** — Location: Hyatt Regency Hotel at Union Station, St. Louis, MO. Contact: Anita Herbst, St. Louis University School of Medicine, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8167.

23 - 27 **Medicolegal Death Investigator Training Course** — Location: St. Louis University Learning Resources Center, St. Louis, MO. Contact: Anita Herbst, St. Louis University School of Medicine, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8167.

23 - May 4 **31st Annual Postgraduate Institute for Pathologists in Clinical Cytopathology —In-Residency Course B** — Location: Johns Hopkins Medical Institutions, Baltimore, MD. Contact: John K. Frost, M.D., or Ms. Betty Ann Remley, 111 Pathology Bldg., The Johns Hopkins Hospital, Baltimore, MD 21205. 301/955-8594.

27 - 28 **Life-Style Symposium: Prescribing for and Obtaining Compliance from Your High Cardiovascular Risk Patients with Dyslipidemia** — Location: Westin Crown Center Hotel, Kansas City, MO. Contact: Bernice Jackson, University of Kansas Medical Center, Office of Continuing Education, Rainbow and Olathe Blvds., Kansas City, KS 66103. 913/588-4490.

27 - 29 **40th Annual Postgraduate Symposium on Anesthesiology** —Location: Ritz-Carlton Hotel, Kansas City, MO. Contact: Bernice Jackson, University of Kansas Medical Center, Office of Continuing Education, Rainbow and Olathe Blvds., Kansas City, KS 66103. 913/588-4490.

May

3 - 5 **Cardiovascular Medicine Legal Environment: Medicine's Response** — Location: Don CeSar Beach Resort, St. Petersburg, Florida. Contact: Anita Herbst, St. Louis University School of Medicine, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8167.

8 - 10 **Introduction to Doppler Echocardiography** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: Anita Herbst, St. Louis University School of Medicine, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8167.

11 - 12 **Low Back & Sciatic Pain: Evaluation & Treatment** — Location: Washington University Medical Center, St. Louis, MO. Contact: Cathy Caruso, Continuing Medical Education, Washington University School of Medicine, Box 8063, 660 S. Euclid, St. Louis, MO 63110. 314/362-6893.

16 **Hematopoietins, Biologics, and Marrow Transplantation in the Treatment of Common Solid Tumors** — Location: Jewish Hospital, St. Louis, MO. Contact: Alan P. Lyss, M.D., Jewish Hospital, 216 S. Kingshighway, P.O. Box 14109, St. Louis, MO 63178. 314/454-7000.

18 **Kansas Medicine: Ten Years Later** — Location: Hyatt Regency Hotel, Kansas City, MO. Contact: Bernice Jackson, University of Kansas Medical Center, Office of Continuing Education, Rainbow and Olathe Blvds., Kansas City, KS 66103. 913/588-4490.

27 - 31 **19th Annual Scientific Assembly - American College of Emergency Physicians State Chapter of California** — Location: Silverado Country Club, Napa, CA. Contact: CAL/ACEP office, 505 N. Sepulveda Blvd., Suite 12, Manhattan Beach, CA 90266. 213/374-4039 or 1-800-SEK-ACEP.

June

1 - 2 **3rd Annual Contact Lens Course** — Location: Washington University Medical Center, St. Louis, MO. Contact: Cathy Caruso, Continuing Medical Education, Washington University School of Medicine, Box 8063, 660 S. Euclid, St. Louis, MO 63110. 314/362-6893.

June

1 - 3 **The Big Four: Obesity, Diabetes Mellitus, Hypertension, Hyperlipidemia** — Location: Holiday Inn Executive Center, Columbia, MO. Contact: Barry Kling, MU School of Medicine, Office of Continuing Education, MA215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

6 - 10 **7th Annual Meeting of the Southern Orthopaedic Association** — Location: Hyatt Regency Hotel, Maui, Hawaii. Contact: Jeanette Stone, Southern Orthopaedic Association, 35 Lakeshore Drive, P.O. Box 190088, Birmingham, AL 35219-0088. 205/945-1848.

7 - 9 **Frontiers in Endosurgery: Flexible Endoscopy, Laser Surgery, and Endourological Techniques** — Location: Washington University Medical Center, St. Louis, MO. Contact: Cathy Caruso, Continuing Medical Education, Washington University School of Medicine, Box 8063, 660 S. Euclid, St. Louis, MO 63110. 314/362-6893.

8 - 9 **Primary Pediatrics** — Location: Holiday Inn Executive Center, Columbia, MO. Contact: Barry Kling, MU School of Medicine, Office of Continuing Education, MA215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

20 **Ovarian Cancer** — Location: Jewish Hospital, St. Louis, MO. Contact: Alan P. Lyss, M.D., Jewish Hospital, 216 S. Kingshighway, P.O. Box 14109, St. Louis, MO 63178. 314/454-7000.

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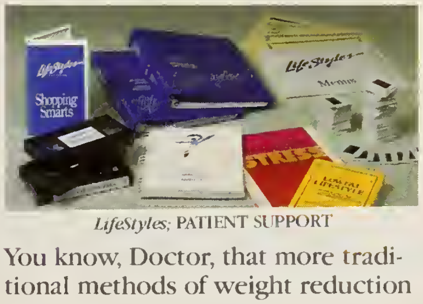

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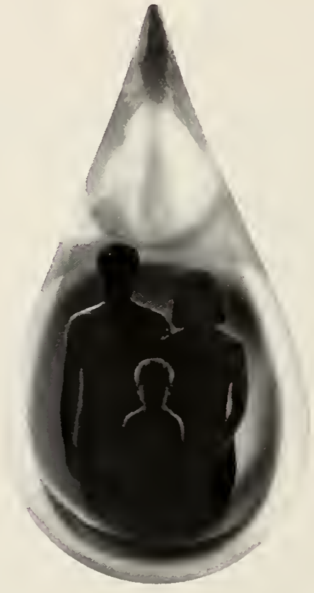

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Medical School News

St. Louis University

■ **William Rosenfeld, M.D.**, assistant professor of neurology, St. Louis University School of Medicine, has been awarded several grants to study the effectiveness of numerous drugs for the treatment of epilepsy.

Two grants totaling $163,684 from the R.W. Johnson Pharmaceutical Research Institute are funding an investigation of the effectiveness of the anti-epileptic drug Topiramate for the treatment of partial seizures. The two-year study is currently underway at 27 institutions across the country. Preliminary studies show the drug reduces the frequency of seizures by half with relatively mild side effects.

Dr. Rosenfeld is also investigating the effectiveness of two other anti-epileptic drugs. The multi-center, one-year studies totalling $91,300 are funded by the Clinical Research International division of Burroughs Wellcome Company and the Pharmaceutical Research Division, Warner-Lambert Company to determine if the drugs Lamotrigine and Gabapentin can be used as additional therapy in patients being treated for partial seizures.

■ **Bernard R. Chaitman, M.D.**, professor of internal medicine, St. Louis University School of Medicine, has been appointed director of the division of cardiology. Dr. Chaitman has been acting director of the division since January.

The announcement was made by **Coy D. Fitch, M.D.**, Drefs professor and chairman of the department of internal medicine. Prior to joining the faculty at St. Louis University School of Medicine, Dr. Chaitman was director of the noninvasive cardiology laboratory at the world-renowned Montreal Heart Institute.

■ **John E. Morley, M.B., B.Ch.**, professor of internal medicine and director of the division of geriatric medicine, is the first holder of the Dammert Chair in gerontology in the department of internal medicine at St. Louis School of Medicine. The *Dammert Fund* was established in 1976 with a gift from the Olga T. Dammert Estate. It will honor Mrs. Dammert and her husband, Louis A. Dammert.

Prior to his appointment, Dr. Morley served at the University of California at Los Angeles (UCLA), where he was professor of medicine, director of Geriatrics Research and was chief of geriatrics at Sepulveda Veterans Affairs Medical Center and UCLA's San Fernando Valley Program.

■ Results of a two-year clinical study indicate that the new drug, rimantadine, may be safer and cause fewer side effects against the influenza A virus than drugs currently on the market. However, a study published in the December 21 issue of The New England Journal of Medicine also says that the influenza virus has a tendency to become drug-resistant during treatment.

Robert B. Belshe, M.D., professor of internal medicine and director of the division of infectious diseases and the Center for Vaccine Development at St. Louis University School of Medicine, is a co-investigator in the two-year study. In October, Belshe received a five-year, $5 million grant from the National Institutes of Health to evaluate, develop and test vaccines against human infectious diseases other than AIDS. Dr. Belshe joined St. Louis University School of Medicine this year, after serving as professor and director of the division of infectious diseases at Marshall University in Huntington, WV. The research was conducted, in part, at Marshall University.

■ **Thomas C. Westfall, Ph.D.**, professor and chairman of the department of pharmacology, has received a three-year, $402,371 renewal grant from the National Institute on Drug Abuse. The grant will support research examining the acute and chronic effects of nicotine on the brain, and the release of dopamine neurons that affect the central nervous system.

Dr. Westfall joined St. Louis University School of Medicine in 1979.

■ **Carole A. Vogler, M.D.**, assistant professor of pathology, has been awarded two grants to continue research on childhood diseases. She recently received a five-year, $125,575 grant from the Jackson Laboratory and the National Institute of Diabetes and Digestive and Kidney Diseases. The award will allow Dr. Vogler to conduct laboratory tests in hopes of finding an effective treatment for mucopolysaccharidoses (MPS VII), an inherited lysosome storage disease that occurs in children. The disease is caused by a missing enzyme that is important in the degradation of carbohydrates within the body. Dr. Vogler has been studying MPS VII for the past three years.

Dr. Vogler has also been awarded the Mary Schofield Purcell Research Fund grant from SIDS Resources, Inc. The grant is one of the few local grants awarded to study the causes of Sudden Infant Death Syndrome (SIDS).

Dr. Vogler joined the St. Louis University School of Medicine faculty in 1985. She is staffed at Cardinal Glennon Children's Hospital.

■ St. Louis University Hospital has established an acute care stroke unit, expanding the services available to stroke victims in the St. Louis area.

The new unit, which is within the Stroke Resource Center, is jointly operated by St. Louis University Hospital and St. Louis University School of

Medicine's department of neurology. The Center has been open since 1986 to provide better diagnosis and treatment options for patients suffering from stroke.

More than two million people in the United States are temporarily or permanently disabled by stroke each year. In the St. Louis area, 2500 people are affected. Presently, the Stroke Resource Center annually evaluates more than 250 stroke patients.

University of Missouri-Kansas City

■ A 1981 graduate of the School of Medicine, Eva **Frazer, M.D.**, is the new president of the University of Missouri System Board of Curators. Dr. Frazer, whose appointment began the first of January, was elected unanimously by her colleagues. In accepting the position, Dr. Frazer said her priorities will be to address the changing role of education in Missouri and to fight for increased state funding for higher education. To this end, she intends to work to weld the Board of Curators into a cohesive unit. Dr. Frazer currently practices at St. Mary's Health Center in St. Louis.

■ **Dev Maulik, M.D., Ph.D.**, professor of obstetrics and gynecology, recently testified before a U.S. Senate subcommittee on behalf of the March of Dimes Birth Defects Foundation. Dr. Maulik spoke on "Prevention of Perinatal Substance Abuse" during a Children, Families, Drugs and Alcoholism subcommittee hearing which addressed Maternal Alcohol and Drug Abuse. Among the directives he recommended was a three-step process that included maternal education during pregnancy, comprehensive prenatal care that includes drug and alcohol treatment as well as family support services, and development of follow-up programs for drug-and alcohol-exposed infants.

■ **Mahmoud Ahmed, Ph.D.**, associate professor of obstetrics/gynecology, and **Charles Foreman, Jr., M.D.**, assistant professor of obstetrics/gynecology, served on the planning committee for a March of Dimes-sponsored conference on The Legal, Moral and Medical Consequences of Drug Use During Pregnancy. Co-sponsors were Swope Parkway Health Center and St. Luke's Hospital of Kansas City. Among the presenters were Dr. Ahmed, who spoke on "Effects of Cocaine Use During Pregnancy on the Fetus, Newborn and Mother." Other UMKC speakers included **Howard Kilbride, M.D.**, associate professor of neonatology, whose topic was, "Acute Management and Outcome of Drug-Exposed Neonates," and **James J. Mongan, M.D.**, dean of the School of Medicine and executive director of Truman Medical Center, who presented "The Economic Impact of Prenatal Drug Abuse on the Health-Care System." In addition, **Stuart Munro, M.D.**, assistant dean for Year-1 and -2 Medicine, and assistant professor of psychiatry, was moderator for a session on "Community Responsibility: Building a Comprehensive Prevention and Treatment Approach."

■ **Marino Martinez-Carrion, Ph.D.**, professor and dean of the School of Basic Life Sciences, and associate professor **Ana Iriarte, Ph.D.**, were awarded a $756,000 grant from the National Institutes of Health for research into Alzheimer's Disease, cancer and aging. The researchers will use the grant to investigate the organization of proteins in cell surfaces, which will help them determine how signals from other cells are received by sensor proteins, and how virus proteins penetrate cells. The five-year study also may help them understand nerve malfunctions responsible for Alzheimer's and myasthenia gravis, the reproduction of cells in aging and cancer, and the mechanisms involved in infections.

■ **Marjorie Sirridge, M.D.**, in October was presented with the Woman of the Year Award by the Metropolitan Business and Professional Women's association.

■ **W. Ray Snider, M.D.**, professor emeritus of surgery, and **Robert W. Matthews, M.D.**, clinical associate professor of surgery, are authors of *Those Indomitable Surgeons of Hospital Hill.* The colorful book chronicles the history of the surgeons at General Hospital and Truman Medical Center from 1908-1989. It is available through the Truman Medical Center Department of Surgery or the Truman Medical Center Gift Shop.

University of Missouri-Columbia

■ Research to Prevent Blindness, which recently awarded MU an unrestricted grant of $45,000 has brought its total support for the School of Medicine's department of ophthalmology to nearly $300,000. The funds provide for advanced research into the prevention and treatment of blinding eye diseases. **Robert P. Burns, M.D.**, department chairman said this year's grant will support juvenile diabetes research.

■ Construction has begun on a 6,400 square foot addition to the Mid-Missouri Red Cross Blood Center in Columbia, which serves medical facilities in 25 central and northeast Missouri counties. The $1 million addition represents a three-way agreement between the American Red Cross, the MU School of Medicine and University Hospital and Clinics.

The addition will allow the Red Cross to cross-match blood products on site, making them ready for transfusion upon receipt. Once the addition is completed, the blood bank, transplant and coagulation laboratories now located at University Hospital will move to the Red Cross Center. Physicians from the School of Medicine's department of pathology will continue to provide medical professional supervision, but the Red Cross will assume administrative responsibility for the labs, which currently are operated by University Hospital.

The project, funded totally by the Red Cross, is scheduled to be completed by mid-summer.

■ **Sheldon Braun, M.D.**, associate professor of pulmonary, critical care and environmental medicine, was elected governor-elect for the state of Missouri at the American College of Chest Physicians' annual meeting in November in Boston, MA. Braun also participated that month in the annual Medical Centre of Montescano's international meeting on pulmonary rehabilitation and physiopathology in Pavia, Italy.

■ **John D. DeSpain, M.D.**, assistant professor of dermatology, gave a poster presentation November 29-December 1 at the American Society of Dermatopathologists' meeting in San Francisco, CA. He and a group of researchers from Denver concluded that in most cases lesions of discoid lupus erythematosus (DLE) and subacute cutaneous lupus erythematosus (SCLE) can be distinguished on the basis of histology.

■ **Ramesh Khanna, M.D.**, professor of nephrology, gave a lecture on continuous ambulatory peritoneal dialysis to the Royal College of Physicians in November. His presentation was sponsored by the University of Wales School of Medicine in Cardiff.

■ **Karl D. Nolph, M.D.**, professor and director of nephrology, has given presentation on peritoneal dialysis in recent weeks at meetings in Greece and Cyprus and to researchers at the National Kidney Foundation's 19th annual scientific meeting in Washington, D.C.

■ **Graham C. Scott, M.D.**, assistant professor of pulmonary, critical care and environmental medicine, presented a paper at the annual symposium of the King Edward Medical College in Lahore, Pakistan, on December 16-17 in collaboration with the Pakistan Research Society.

■ MU dermatologists gave several presentations December 2 at the annual meeting of the American Academy of Dermatologists in San Francisco, CA. **David Clark, M.D.**, director of dermatologic surgery, spoke on surgery and oral lesions. **Philip C. Anderson, M.D.**, director of the division of dermatology, presented talks on toxins and on the history of the specialty.

In Memoriam

■ **William A. Cox, M.D.**, died November 20, 1989 at the age of 69. Dr. Cox, a family practitioner, practiced medicine in the Jefferson City area for almost 35 years before he retired in 1985. During his career, he was a physician with the Social Security Administration in disability determinations and served on the staffs of St. Mary's Health Center and Memorial Community Hospital in Jefferson City. He obtained his medical degree at the University of Tennessee Medical School in 1945. Dr. Cox was a member of the Cole County Medical Society.

■ **Hyman J. Goldman, M.D.**, died November 19, 1989 at the age of 82. Dr. Goldman, a dermatologist, practiced medicine in St. Louis for more than 50 years. He obtained his medical degree at Washington University School of Medicine in 1930. Dr. Goldman was a member of the St. Louis Metropolitan Medical Society.

■ **Irwin I. Rosenthal, M.D.**, died November 12, 1989 at the age of 82. Dr. Rosenthal, a family practitioner, practiced medicine in St. Joseph for 32 years before retiring in 1969. He was a veteran of World War II serving in the Army Medical Corps. He obtained his medical degree at the University of Indiana School of Medicine in 1936. Dr. Rosenthal was a member of the Buchanan County Medical Society.

■ **J. Newton Wakeman, Sr., M.D.**, died September 29, 1989 at the age of 91. Dr. Wakeman, a general surgeon, practiced medicine in Springfield for many years. He obtained his medical degree at Rush University Medical College in 1926. Dr. Wakeman was a member of the Greene County Medical Society.

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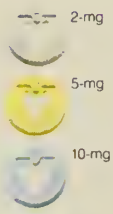
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New Members

■ **Michael R. Borts, M.D.,** 12 Westbury, St. Charles 63301, has become a member of the St. Charles-Lincoln County Medical Society. Dr. Borts received his preliminary education at the University of Missouri-Columbia and obtained his medical degree at the St. Louis University School of Medicine in 1983. He completed his residency at Southern Illinois University Affiliated Hospitals, Springfield, IL. Dr. Borts specializes in internal medicine.

■ **Pamela D. Every, M.D.,** Cape Radiology Group, 36 Doctors' Park, Cape Girardeau 63701, has become a member of the Cape Girardeau County Area Medical Society. Dr. Every received her preliminary education at Lehigh University and obtained her medical degree at Hahnemann Medical College in 1981. She completed her residency at Cook County Hospital, Chicago, IL. Dr. Every specializes in radiology.

■ **Robert I. Feldman, M.D.,** 3635 Vista at Grand, P.O. Box 15250, Dept. of Otolaryngology, St. Louis 63146, has become a member of the St. Louis Metropolitan Medical Society. Dr. Feldman obtained his medical degree at the University of Toronto Medical School in 1983. He completed his residency at St. Louis University, St. Louis, MO. Dr. Feldman specializes in otolaryngology.

■ **Pamela K. Grow, M.D.,** Russell-Young Clinic, 11th & Bishop, Rolla 65401, has become a member of the Mid-Missouri County Medical Society. Dr. Grow received her preliminary education at the University of Nebraska and obtained her medical degree at Washington University School of Medicine in 1985. She completed her residency at St. Louis Children's Hospital, St. Louis, MO. Dr. Grow specializes in pediatrics.

■ **George T. Grossberg, M.D.,** 1221 S. Grand, St. Louis University School of Medicine, St. Louis 63104, has become a member of the St. Louis Metropolitan Medical Society. Dr. Grossberg obtained his medical degree at the St. Louis University School of Medicine in 1975. He completed his residency at St. Louis University, St. Louis, MO. Dr. Grossberg specializes in psychiatry.

■ **William G. Humphreys, M.D.,** 5301 Faraon, Suite 210, St. Joseph 64506, has become a member of the Buchanan County Medical Society. Dr. Humphreys received his preliminary education at the University of Missouri-Columbia and obtained his medical degree at the MU School of Medicine in 1984. He completed his residency at the University of Missouri Hospital and Clinics, Columbia, MO. Dr. Humphreys specializes in orthopedic surgery.

■ **Elmer T. Irinyi, D.O.,** 313 S. 169 Hwy., Gower 64454, has become a member of the Buchanan County Medical Society. Dr. Irinyi received his preliminary education at Wilcox College and obtained his osteopathic degree at the Des Moines College of Osteopathic Medicine and Surgery in 1942. He completed his residency at Cleveland Osteopathic Hospital, Cleveland, Ohio. Dr. Irinyi specializes in general practice.

■ **Victor E. Isaacs, D.O.,** Doctors' Park, Cape Girardeau 63701, has become a member of the Cape Girardeau Area County Medical Society. Dr. Isaacs received his preliminary education at Butler University and obtained his osteopathic degree at Kirksville College of Osteopathic Medicine in 1978. He completed his residency at City Line Hospital, Philadelphia, PA. Dr. Isaacs specializes in family practice.

■ **Dana M. King, III, M.D.,** 5301 Faraon, Suite 160, St. Joseph 64506, has become a member of the Buchanan County Medical Society. Dr. King received his preliminary education at the University of Missouri-Columbia and obtained his medical degree at the MU School of Medicine in 1983. He completed his residency at the University of Missouri Hospital and Clinics and Harry S. Truman Veterans Hospital, Columbia, MO. Dr. King specializes in otolaryngology.

■ **Alan D. Megibow, M.D.,** 1802 Union Street Square, St. Joseph 64501, has become a member of the Buchanan County Medical Society. Dr. Megibow received his preliminary education at Union College and obtained his medical degree at Albany Medical College in 1964. He completed his residency at Menninger School of Psychiatry, Topeka, KS. Dr. Megibow specializes in child and adolescent psychiatry.

■ **Karen L. Moritz, M.D.,** 141 N. Meramec, Suite 108, Clayton 63105, has become a member of the St. Louis Metropolitan Medical Society. Dr. Moritz obtained her medical degree at the St. Louis University School of Medicine in 1970. She completed her residency at St. Louis Children's Hospital, St. Louis, MO. Dr. Moritz specializes in psychiatry.

■ **Patricio H. Mujica, M.D.,** 7777 Hennessy Blvd., East Baton Rouge, Baton Rouge, LA 70808, has become a member of the Buchanan County Medical Society. Dr. Mujica received his preliminary education at Instituto Nacional – Chile and obtained his medical degree at the Universidad Catolica De Chile in 1971. He completed his residency at Georgetown University Hospital, Washington, D.C. Dr. Mujica specializes in neurosurgery.

■ **Samuel A. Ockner, M.D.,** SLRMC, Emergency Division, 5535 Delmar Blvd., St. Louis 63112, has become a member of the St. Louis Metropolitan Medical Society. Dr. Ockner obtained his medical degree at the University of Cincinnati College of Medicine in 1984. He completed his residency at Barnes Hospital, St. Louis, MO. Dr. Ockner specializes in internal medicine.

■ **Joseph M. Ojile, M.D.,** 1227 Fernridge Pkwy., Suite 110, St. Louis 63141, has become a member of the St. Louis Metropolitan Medical Society. Dr. Ojile obtained his medical degree at St. Louis University in 1984. He completed his residency at St. Louis University, St. Louis, MO. Dr. Ojile specializes in internal medicine.

Allen S. Palmer, D.O., 3394 McKelvey, Bridgeton 63044, has become a member of the St. Louis Metropolitan Medical Society. Dr. Palmer obtained his osteopathic degree at the Kansas City College of Osteopathic Medicine in 1967. He completed his residency at Chicago Osteopathic Hospital, Chicago, IL. Dr. Palmer specializes in obstetrics/gynecology surgery.

Laurence F. Perlstein, M.D., 11642 West Florissant, St. Louis 63033, has become a member of the St. Louis Metropolitan Medical Society. Dr. Perlstein obtained his medical degree at the University of Louisville in 1974. He completed his residency at the Medical College of Pennsylvania, Philadelphia, PA. Dr. Perlstein specializes in internal medicine.

Sanford E. Rabushka, M.D., 11133 Dunn Road, St. Louis 63136, has become a member of the St. Louis Metropolitan Medical Society. Dr. Rabushka obtained his medical degree at Washington University School of Medicine in 1955. He completed his residency at Mallinckrodt Institute of Radiology, St. Louis, MO. Dr. Rabushka specializes in radiology.

Martin J. Roitman, D.O., 3394 McKelvey, Bridgeton 63044, has become a member of the St. Louis Metropolitan Medical Society. Dr. Roitman obtained his osteopathic degree at Kirksville College of Osteopathic Medicine in 1963. He completed his residency at Kansas City Hospital, Kansas City, MO. Dr. Roitman specializes in obstetrics/gynecology surgery.

Daljeet R. Singh, M.D., 12 W. 19th St., Higginsville 64037, has become a member of the Lafayette-Ray County Medical Society. Dr. Singh obtained his medical degree at the Government Medical College – India in 1975. Dr. Singh specializes in general practice.

Michael O. Turner, M.D., 1435 Mt. Auburn Rd., Cape Girardeau 63701, has become a member of the Cape Girardeau Area County Medical Society. Dr. Turner received his preliminary education at Northeast Louisiana University and obtained his medical degree at Louisiana State University School of Medicine in 1984. He completed his residency at the University of Missouri Hospital and Clinics, Columbia, MO. Dr. Turner specializes in pediatrics.

Robert L. Yarwood, M.D., 200 Medical Plaza, Suite 101, Lake St. Louis 63367, has become a member of the St. Charles-Lincoln County Medical Society. Dr. Yarwood received his preliminary education at the University of New Mexico and obtained his medical degree at the University of Texas Health Science Center at Dallas in 1979. He completed his residency at the U.S. Naval Hospital, Portsmouth, VA. Dr. Yarwood specializes in obstetrics/gynecology.

STUDENT MEMBERS

University of Missouri-Columbia

Timothy P. Manson

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Final Disciplinary Actions

The following is a listing of final disciplinary actions taken by the State Board of Registration for the Healing Arts. The listing includes actions finalized through October 1989. This information is made available to the public under the provisions of Section 334.101 RSMo.

■ **ANDREW E. CYRUS, M.D.,** *St. Louis, Missouri*
Order dated 8/14/89 — Voluntary surrender of Missouri license.
Violation: Section 334.100.2(4o) RSMo. Supp. 1988.

■ **ERIC J. JOHNSON, M.D.,** *Chesterfield, Missouri*
Order dated 8/31/89 — Probation modified.

■ **WILLIAM H. WARREN, M.D.,** *Springfield, Missouri*
Order dated 9/25/89 — Revocation of Missouri license.
Violation: Section 334.100.2(24d)(24f), 334.100.3 RSMo. Supp. 1988.

■ **CRISANTO S. GUALBERTO, M.D.,** *Vandalia, Missouri*
Order dated 7/5/89 — Five years probation.
Violation: Section 334.100.2(13)(23) RSMo. Supp. 1988.

■ **DEJA SUTHIKANT, M.D.,** *St. Joseph, Missouri*
Order dated 9/18/89 — Five years probation.
Violation: Section 334.100.2(8)(23) RSMo. Supp. 1988.

■ **ROBERT E. HALES, M.D.,** *LaBelle, Missouri*
Order dated 9/8/89 — Revocation of Missouri license.
Violation: Section 334.100.2(1)(4)(8)(13)(14) RSMo. 1986.

■ **PAUL G. STEINBICKER, M.D.,** *Bridgeton, Missouri*
Order dated 8/25/89 — Voluntary surrender of Missouri license.
Violation: Section 334.100.2(1)(4h)(4o)(6)(10)(13) RSMo. Supp. 1988.

■ **WILLIAM I. STRYKER, M.D.,** *St. Louis, Missouri*
Order dated 9/18/89 — Probation. Must retire by 7/8/91.
Violation: Section 334.100.2 RSMo.

■ **JEFFREY REISMAN, M.D.,** *Columbia, Missouri*
Order dated 9/9/89 — Temporary license on probation. Expires 6/30/90.
Violation: Section 334.100.2(1)(5)(13) RSMo. Supp. 1988.

■ **TERRY G. GILLILAND, D.O.,** *Kansas City, Missouri*
Order dated 8/18/89 — Probation terminated.

■ **CHRISTOPHER B. KIRBY, M.D.,** *St. Louis, Missouri*
Order dated 8/13/89 — Probation terminated.

■ **DONALD H. NELSON, D.O.,** *Columbia, Missouri*
Order dated 8/18/89 — Probation modified.

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Physicians Wanted

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INTERNIST: Swope Parkway Health Center has an Internist to work in our Adult Medicine Department. Swope Parkway Health Center is a primary care ambulatory patient care center. We offer comparable salaries and excellent benefits (health insurance, life insurance, pension plan, long-term disability and malpractice. For information contact: Cheryl Kelow, Personnel Director at 816/923-5800, ext 225.

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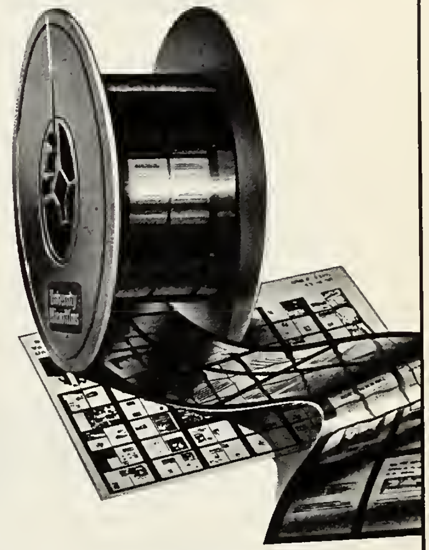

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Resolutions to be introduced at the 1990 House of Delegates must be submitted to MSMA Headquarters by **February 19, 1990,** to be published in the Delegate's Handbooks.

Resolutions not submitted before the deadline must be introduced under the procedure outlined in the MSMA Bylaws, Chapter III, Sect. I. Prompt submission of resolutions assures their inclusion in the Handbook and allows for their full consideration.

If you have questions regarding resolution submission, contact Jo-Ellyn M. Ryall, M.D., Speaker, MSMA House of Delegates, 9216 Clayton Rd., #105, St. Louis, MO 63124, 314/868-7700 or MSMA Headquarters.

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How Supplied: Oral tablets of Yocon® 1/12 gr. 5.4 mg in bottles of 100's NDC 53159-001-01 and 1000's NDC 53159-001-10.

References:

1. A. Morales et al., New England Journal of Medicine: 1221. November 12, 1981.
2. Goodman, Gilman — The Pharmacological basis of Therapeutics 6th ed., p. 176-188. McMillan December Rev. 1/85.
3. Weekly Urological Clinical letter, 27:2, July 4, 1983.
4. A. Morales et al., The Journal of Urology 128: 45-47, 1982.

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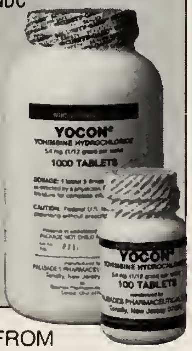

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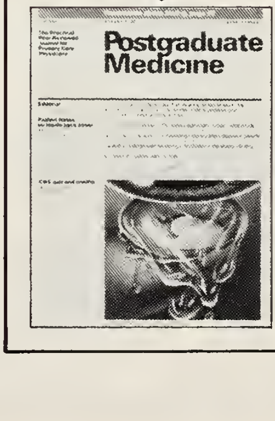

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Manuscripts should be typewritten, double-spaced, and the original with one copy submitted. Retain another copy for proofreading. Please number the pages of your manuscript. Manuscripts are not returned. Hospital and University appointments of the author(s) should accompany the manuscript. A synopsis-abstract of no more than 75 words should accompany the manuscript. Manuscripts may be submitted on 5¼ or 3½ floppy disks using WordPerfect 4.2 or below.

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References should be cited in numerical order in the text and arranged at the end of the article in the same order in which they are cited. The reference should give name of author, title of article, name of periodical, volume number, initial page number and year. Authors are responsible for reference accuracy.

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Editorials should be written in clear, concise language. Length should be about two or three pages typed with double spacing.

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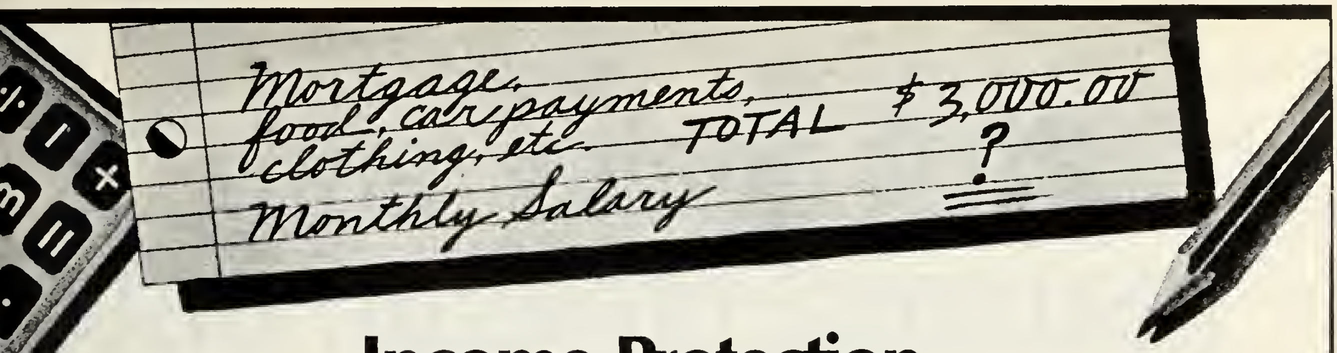

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Warnings: *Angioedema*. Angioedema of the face, extremities, lips, tongue, glottis, and/or larynx has been reported in patients treated with ACE inhibitors, including VASOTEC. In such cases, VASOTEC should be promptly discontinued and the patient carefully observed until the swelling disappears. In instances where swelling has been confined to the face and lips, the condition has generally resolved without treatment, although antihistamines have been useful in relieving symptoms. Angioedema associated with laryngeal edema may be fatal. **Where there is involvement of the tongue, glottis, or larynx likely to cause airway obstruction, appropriate therapy, e.g., subcutaneous epinephrine solution 1:1000 (0.3 mL to 0.5 mL), should be promptly administered**. (See ADVERSE REACTIONS.)

Hypotension. Excessive hypotension is rare in uncomplicated hypertensive patients treated with VASOTEC alone. Patients with heart failure given VASOTEC commonly have some reduction in blood pressure, especially with the first dose, but discontinuation of therapy for continuing symptomatic hypotension usually is not necessary when dosing instructions are followed; caution should be observed when initiating therapy. (See DOSAGE AND ADMINISTRATION.) Patients at risk for excessive hypotension, sometimes associated with oliguria and/or progressive azotemia and rarely with acute renal failure and/or death, include those with the following conditions or characteristics: heart failure, hyponatremia, high-dose diuretic therapy, recent intensive diuresis or increase in diuretic dose, renal dialysis, or severe volume and/or salt depletion of any etiology. It may be advisable to eliminate the diuretic (except in patients with heart failure), reduce the diuretic dose, or increase salt intake cautiously before initiating therapy with VASOTEC in patients at risk for excessive hypotension who are able to tolerate such adjustments. (See PRECAUTIONS, *Drug Interactions* and ADVERSE REACTIONS.) In patients at risk for excessive hypotension, therapy should be started under very close medical supervision and such patients should be followed closely for the first two weeks of treatment and whenever the dose of enalapril and/or diuretic is increased. Similar considerations may apply to patients with ischemic heart disease or cardiovascular disease in whom an excessive fall in blood pressure could result in a myocardial infarction or cerebrovascular accident. If excessive hypotension occurs, the patient should be placed in the supine position and, if necessary, receive an intravenous infusion of normal saline. A transient hypotensive response is not a contraindication to further doses of VASOTEC, which usually can be given without difficulty once the blood pressure has stabilized. If symptomatic hypotension develops, a dose reduction or discontinuation of VASOTEC or concomitant diuretic may be necessary.

Neutropenia/Agranulocytosis: Another ACE inhibitor, captopril, has been shown to cause agranulocytosis and bone marrow depression, rarely in uncomplicated patients but more frequently in patients with renal impairment, especially if they also have a collagen vascular disease. Available data from clinical trials of enalapril are insufficient to show that enalapril does not cause agranulocytosis at similar rates. Foreign marketing experience has revealed several cases of neutropenia or agranulocytosis in which a causal relationship to enalapril cannot be excluded. Periodic monitoring of white blood cell counts in patients with collagen vascular disease and renal disease should be considered.

Precautions: *General: Impaired Renal Function*. As a consequence of inhibiting the renin-angiotensin-aldosterone system, changes in renal function may be anticipated in susceptible individuals. In patients with severe heart failure whose renal function may depend on the activity of the renin-angiotensin-aldosterone system, treatment with ACE inhibitors, including VASOTEC, may be associated with oliguria and/or progressive azotemia and rarely with acute renal failure and/or death.

In clinical studies in hypertensive patients with unilateral or bilateral renal artery stenosis, increases in blood urea nitrogen and serum creatinine were observed in 20% of patients. These increases were almost always reversible upon discontinuation of enalapril and/or diuretic therapy. In such patients, renal function should be monitored during the first few weeks of therapy.

Some patients with hypertension or heart failure with no apparent preexisting renal vascular disease have developed increases in blood urea and serum creatinine, usually minor and transient, especially when VASOTEC has been given concomitantly with a diuretic. This is more likely to occur in patients with preexisting renal impairment. Dosage reduction and/or discontinuation of the diuretic and/or VASOTEC may be required.

Evaluation of patients with hypertension or heart failure should always include assessment of renal function. (See DOSAGE AND ADMINISTRATION.)

Hyperkalemia. Elevated serum potassium (>5.7 mEq/L) was observed in approximately 1% of hypertensive patients in clinical trials. In most cases these were isolated values which resolved despite continued therapy. Hyperkalemia was a cause of discontinuation of therapy in 0.28% of hypertensive patients. In clinical trials in heart failure, hyperkalemia was observed in 3.8% of patients, but was not a cause for discontinuation.

Risk factors for the development of hyperkalemia include renal insufficiency, diabetes mellitus, and the concomitant use of potassium-sparing diuretics, potassium supplements, and/or potassium-containing salt substitutes, which should be used cautiously, if at all, with VASOTEC. (See *Drug Interactions*.)

Surgery/Anesthesia. In patients undergoing major surgery or during anesthesia with agents that produce hypotension, enalapril may block angiotensin II formation secondary to compensatory renin release. If hypotension occurs and is considered to be due to this mechanism, it can be corrected by volume expansion.

Information for Patients:

Angioedema. Angioedema, including laryngeal edema, may occur especially following the first dose of enalapril. Patients should be so advised and told to report immediately any signs or symptoms suggesting angioedema (swelling of face, extremities, eyes, lips, tongue, difficulty in swallowing or breathing) and to take no more drug until they have consulted with the prescribing physician.

Hypotension. Patients should be cautioned to report lightheadedness, especially during the first few days of therapy. If actual syncope occurs, the patients should be told to discontinue the drug until they have consulted with the prescribing physician.

All patients should be cautioned that excessive perspiration and dehydration may lead to an excessive fall in blood pressure because of reduction in fluid volume. Other causes of volume depletion such as vomiting or diarrhea may also lead to a fall in blood pressure; patients should be advised to consult with the physician.

Hyperkalemia. Patients should be told not to use salt substitutes containing potassium without consulting their physician.

Neutropenia. Patients should be told to report promptly any indication of infection (e.g., sore throat, fever) which may be a sign of neutropenia.

NOTE: As with many other drugs, certain advice to patients being treated with enalapril is warranted. This information is intended to aid in the safe and effective use of this medication. It is not a disclosure of all possible adverse or intended effects.

Drug Interactions:

Hypotension. Patients on Diuretic Therapy. Patients on diuretics and especially those in whom diuretic therapy was recently instituted may occasionally experience an excessive reduction of blood pressure after initiation of therapy with enalapril. The possibility of hypotensive effects with enalapril can be minimized by either discontinuing the diuretic or increasing the salt intake prior to initiation of treatment with enalapril. If it is necessary to continue the diuretic, provide close medical supervision after the initial dose for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and DOSAGE AND ADMINISTRATION.)

Agents Causing Renin Release: The antihypertensive effect of VASOTEC is augmented by antihypertensive agents that cause renin release (e.g., diuretics).

Other Cardiovascular Agents. VASOTEC has been used concomitantly with beta-adrenergic-blocking agents, methyldopa, nitrates, calcium-blocking agents, hydralazine, prazosin, and digoxin without evidence of clinically significant adverse interactions.

Agents Increasing Serum Potassium. VASOTEC attenuates potassium loss caused by thiazide-type diuretics. Potassium-sparing diuretics (e.g., spironolactone, triamterene, or amiloride), potassium supplements, or potassium-containing salt substitutes may lead to significant increases in serum potassium. Therefore, if concomitant use of these agents is indicated because of demonstrated hypokalemia, they should be used with caution and with frequent monitoring of serum potassium. Potassium-sparing agents should generally not be used in patients with heart failure receiving VASOTEC.

Lithium. Lithium toxicity has been reported in patients receiving lithium concomitantly with drugs which cause elimination of sodium, including ACE inhibitors. A few cases of lithium toxicity have been reported in patients receiving concomitant VASOTEC and lithium and were reversible upon discontinuation of both drugs. It is recommended that serum lithium levels be monitored frequently if enalapril is administered concomitantly with lithium.

Pregnancy—Category C. There was no fetotoxicity or teratogenicity in rats treated with up to 200 mg/kg/day of enalapril (333 times the maximum human dose). Fetotoxicity, expressed as a decrease in average fetal weight, occurred in rats given 1200 mg/kg/day of enalapril but did not occur when these animals were supplemented with saline. Enalapril was not teratogenic in rabbits. However, maternal and fetal toxicity occurred in some rabbits at doses of 1 mg/kg/day or more. Saline supplementation prevented the maternal and fetal toxicity seen at doses of 3 and 10 mg/kg/day, but not at 30 mg/kg/day (50 times the maximum human dose).

Radioactivity was found to cross the placenta following administration of labeled enalapril to pregnant hamsters.

There are no adequate and well-controlled studies of enalapril in pregnant women. However, data are available that show enalapril crosses the human placenta. Because the risk of fetal toxicity with the use of ACE inhibitors has not been clearly defined, VASOTEC® (Enalapril Maleate, MSD) should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Postmarketing experience with all ACE inhibitors thus far suggests the following with regard to pregnancy outcome. Inadvertent exposure limited to the first trimester of pregnancy has not been reported to affect fetal outcome adversely. Fetal exposure during the second and third trimesters of pregnancy has been associated with fetal and neonatal morbidity and mortality.

When ACE inhibitors are used during the later stages of pregnancy, there have been reports of hypotension and decreased renal perfusion in the newborn. Oligohydramnios in the mother has also been reported, presumably representing decreased renal function in the fetus. Infants exposed *in utero* to ACE inhibitors should be closely observed for hypotension, oliguria, and hyperkalemia. If oliguria occurs, attention should be directed toward support of blood pressure and renal perfusion with the administration of fluids and pressors as appropriate. Problems associated with prematurity such as patent ductus arteriosus have occurred in association with maternal use of ACE inhibitors, but it is not clear whether they are related to ACE inhibition, maternal hypertension, or the underlying prematurity.

Nursing Mothers. Milk in lactating rats contains radioactivity following administration of ^{14}C enalapril maleate. It is not known whether this drug is secreted in human milk. Because many drugs are secreted in human milk, caution should be exercised when VASOTEC is given to a nursing mother.

Pediatric Use. Safety and effectiveness in children have not been established.

Adverse Reactions: VASOTEC has been evaluated for safety in more than 10,000 patients, including over 1000 patients treated for one year or more. VASOTEC has been found to be generally well tolerated in controlled clinical trials involving 2987 patients.

HYPERTENSION. The most frequent clinical adverse experiences in controlled trials were: headache (5.2%), dizziness (4.3%), and fatigue (3%).

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in controlled clinical trials were: diarrhea (1.4%), nausea (1.4%), rash (1.4%), cough (1.3%), orthostatic effects (1.2%), and asthenia (1.1%).

HEART FAILURE. The most frequent clinical adverse experiences in both controlled and uncontrolled trials were: dizziness (7.9%), hypotension (6.7%), orthostatic effects (2.2%), syncope (2.2%), cough (2.2%), chest pain (2.1%), and diarrhea (2.1%).

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in both controlled and uncontrolled clinical trials were: fatigue (1.8%), headache (1.8%), abdominal pain (1.6%), asthenia (1.6%), orthostatic hypotension (1.6%), vertigo (1.6%), angina pectoris (1.5%), nausea (1.3%), vomiting (1.3%), bronchitis (1.3%), dyspnea (1.3%), urinary tract infection (1.3%), rash (1.3%), and myocardial infarction (1.2%).

Other serious clinical adverse experiences occurring since the drug was marketed or adverse experiences occurring in 0.5% to 1% of patients with hypertension or heart failure in clinical trials in order of decreasing severity within each category.

Cardiovascular. Cardiac arrest; myocardial infarction or cerebrovascular accident, possibly secondary to excessive hypotension in high-risk patients (see WARNINGS, *Hypotension*); cardiac arrest; pulmonary embolism and infarction; rhythm disturbances; atrial fibrillation; palpitation.

Digestive. Ileus, pancreatitis, hepatitis or cholestatic jaundice, melena, anorexia, dyspepsia, constipation, glossitis, stomatitis.

Musculoskeletal. Muscle cramps.

Nervous/Psychiatric. Depression, confusion, ataxia, somnolence, insomnia, nervousness, paresthesia.

Urogenital. Renal failure, oliguria, renal dysfunction (see PRECAUTIONS and DOSAGE AND ADMINISTRATION).

Respiratory. Bronchospasm, rhinorrhea, sore throat and hoarseness, asthma, upper respiratory infection.

Skin. Herpes zoster, urticaria, pruritus, alopecia, flushing, hyperhidrosis.

Special Senses. Blurred vision, taste alteration, tinnitus.

A symptom complex has been reported which may include a positive ANA, an elevated erythrocyte sedimentation rate, arthralgias/arthritis, myalgias, fever, serositis, vasculitis, leukocytosis, eosinophilia, photosensitivity, rash, and other dermatologic manifestations.

Angioedema. Angioedema has been reported in patients receiving VASOTEC (0.2%). Angioedema associated with laryngeal edema may be fatal. If angioedema of the face, extremities, lips, tongue, glottis, and/or larynx occurs, treatment with VASOTEC should be discontinued and appropriate therapy instituted immediately. (See WARNINGS.)

Hypotension. In the hypertensive patients, hypotension occurred in 0.9% and syncope occurred in 0.5% of patients following the initial dose or during extended therapy. Hypotension or syncope was a cause for discontinuation of therapy in 0.1% of hypertensive patients. In heart failure patients, hypotension occurred in 6.7% and syncope occurred in 2.2% of patients. Hypotension or syncope was a cause for discontinuation of therapy in 1.9% of patients with heart failure. (See WARNINGS.)

Clinical Laboratory Test Findings

Serum Electrolytes. Hyperkalemia (see PRECAUTIONS), hyponatremia.

Creatinine, Blood Urea Nitrogen. In controlled clinical trials, minor increases in blood urea nitrogen and serum creatinine, reversible upon discontinuation of therapy, were observed in about 0.2% of patients with essential hypertension treated with VASOTEC alone. Increases are more likely to occur in patients receiving concomitant diuretics or in patients with renal artery stenosis. (See PRECAUTIONS.) In patients with heart failure who were also receiving diuretics with or without digitalis, increases in blood urea nitrogen or serum creatinine, usually reversible upon discontinuation of VASOTEC and/or other concomitant diuretic therapy, were observed in about 11% of patients. Increases in blood urea nitrogen or creatinine were a cause for discontinuation in 1.2% of patients.

Hemoglobin and Hematocrit. Small decreases in hemoglobin and hematocrit (mean decreases of approximately 0.3 g% and 1.0 vol %, respectively) occur frequently in either hypertension or heart failure patients treated with VASOTEC but are rarely of clinical importance unless another cause of anemia coexists. In clinical trials, less than 0.1% of patients discontinued therapy due to anemia.

Other (Causal Relationship Unknown): In marketing experience, rare cases of neutropenia, thrombocytopenia, and bone marrow depression have been reported. A few cases of hemolysis have been reported in patients with G6PD deficiency.

Liver Function Tests. Elevations of liver enzymes and/or serum bilirubin have occurred.

Dosage and Administration: *Hypertension*. In patients who are currently being treated with a diuretic, symptomatic hypotension occasionally may occur following the initial dose of VASOTEC. The diuretic should, if possible, be discontinued for two to three days before beginning therapy with VASOTEC to reduce the likelihood of hypotension. (See WARNINGS.) If the patient's blood pressure is not controlled with VASOTEC alone, diuretic therapy may be resumed.

If the diuretic cannot be discontinued, an initial dose of 2.5 mg should be used under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and PRECAUTIONS, *Drug Interactions*.)

The recommended initial dose in patients not on diuretics is 5 mg once a day. Dosage should be adjusted according to blood pressure response. The usual dosage range is 10 to 40 mg per day administered in a single dose or in two divided doses. In some patients treated once daily, the antihypertensive effect may diminish toward the end of the dosing interval. In such patients, an increase in dosage or twice-daily administration should be considered. If blood pressure is not controlled with VASOTEC alone, a diuretic may be added.

Concomitant administration of VASOTEC with potassium supplements, potassium salt substitutes, or potassium-sparing diuretics may lead to increases of serum potassium (see PRECAUTIONS).

Dosage Adjustment in Hypertensive Patients with Renal Impairment. The usual dose of enalapril is recommended for patients with a creatinine clearance > 30 mL/min (serum creatinine of up to approximately 3 mg/dL). For patients with creatinine clearance ≤ 30 mL/min (serum creatinine ≥ 3 mg/dL), the first dose is 2.5 mg once daily. The dosage may be titrated upward until blood pressure is controlled or to a maximum of 40 mg daily.

Heart Failure. VASOTEC is indicated as adjunctive therapy with diuretics and digitalis. The recommended starting dose is 2.5 mg once or twice daily. After the initial dose of VASOTEC, the patient should be observed under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and PRECAUTIONS, *Drug Interactions*.) If possible, the dose of the diuretic should be reduced, which may diminish the likelihood of hypotension. The appearance of hypotension after the initial dose of VASOTEC does not preclude subsequent careful dose titration with the drug, following effective management of the hypotension. The usual therapeutic dosing range for the treatment of heart failure is 5 to 20 mg daily given in two divided doses. The maximum daily dose is 40 mg. Once-daily dosing has been effective in a controlled study, but nearly all patients in this study were given 40 mg, the maximum recommended daily dose, and there has been much more experience with twice-daily dosing. In addition, in a placebo-controlled study which demonstrated reduced mortality in patients with severe heart failure (NYHA Class IV), patients were treated with 2.5 to 40 mg per day of VASOTEC, almost always administered in two divided doses. (See CLINICAL PHARMACOLOGY, *Pharmacodynamics and Clinical Effects*.) Dosage may be adjusted depending upon clinical or hemodynamic response. (See WARNINGS.)

Dosage Adjustment in Patients with Heart Failure and Renal Impairment or Hyponatremia. In patients with heart failure who have hyponatremia (serum sodium < 130 mEq/L) or with serum creatinine >1.6 mg/dL, therapy should be initiated at 2.5 mg daily under close medical supervision. (See DOSAGE AND ADMINISTRATION, *Heart Failure*, WARNINGS, and PRECAUTIONS, *Drug Interactions*.) The dose may be increased to 2.5 mg b.i.d., then 5 mg b.i.d. and higher as needed, usually at intervals of four days or more, if at the time of dosage adjustment there is not excessive hypotension or significant deterioration of renal function. The maximum daily dose is 40 mg.

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Missouri Medicine

Journal of the Missouri State Medical Association March 1990

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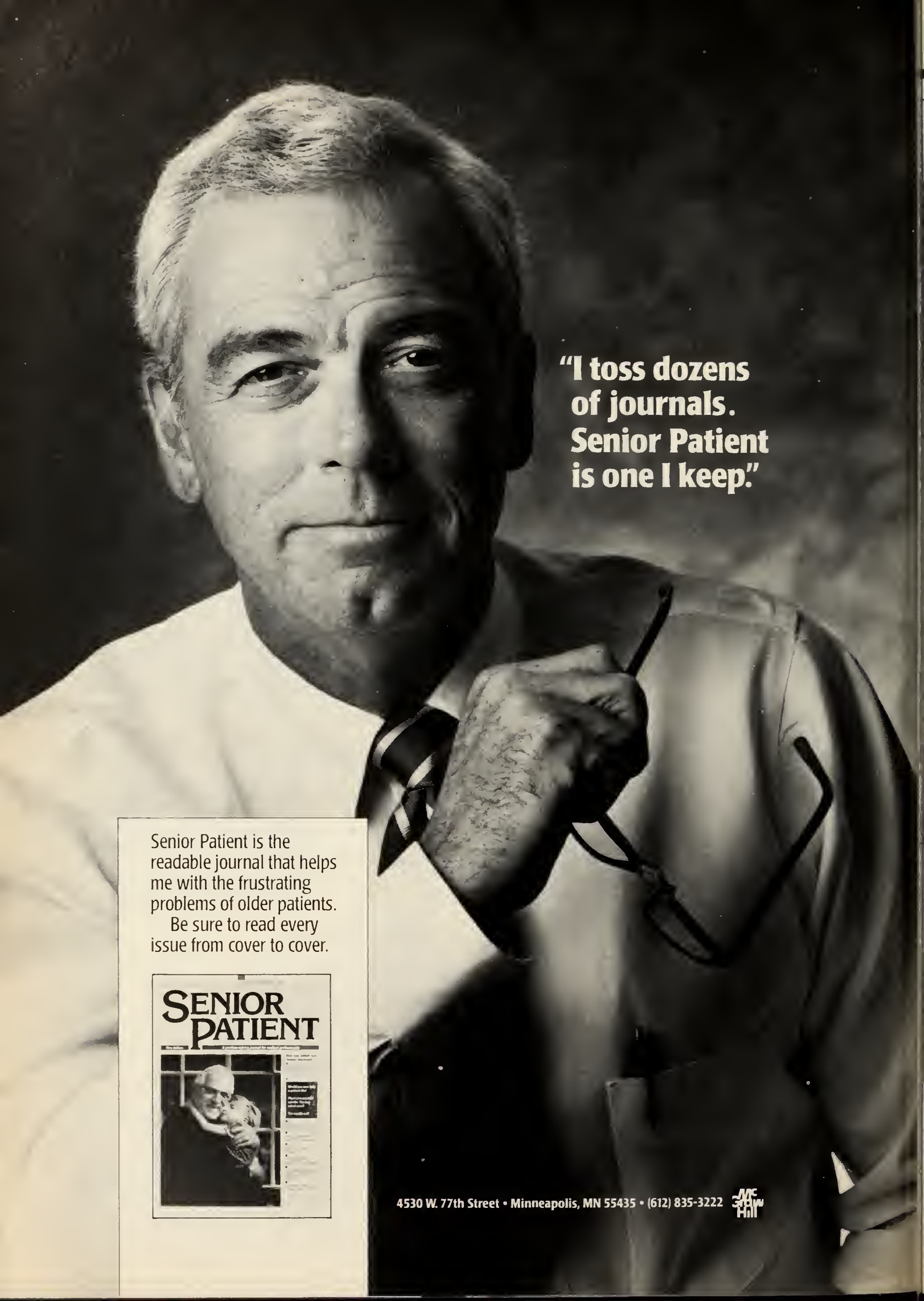

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EDITOR'S DESK

by Donald G. Sessions, M.D.
Editor

Caring

In a highly technological society that values autonomy, individualism, and competitiveness, what is the value of caring? What is the danger if technological advances are not used within a context of compassionate caring? Looking at these questions is critical to an understanding of the changes taking place in contemporary medicine. Patients and their agents (such as third party payers) are ready and willing to pay for new and advanced technology. Providers of medical treatment are not, however, directly reimbursed for rendering such treatment in an expert or masterful caring manner. But in the absence of caring, patients often feel cheated and angry — even if the treatment is succesful.

Patricia Benner and Judith Wrubel address this in their book, *The Primacy of Caring*.[1] Caring, they say, means that persons, events, projects, and things matter to people. Caring describes "a wide range of involvements, from romantic love to parental love to friendship; from caring for one's garden to caring about one's work to caring for and about one's patients."[2]

Caring, by allowing a person to focus on the one cared for rather than on oneself produces a condition of connection and concern. Competence and scientific knowledge are not enough to prove a physician effective. Caring changes the focus and allows one to observe subtle changes in a patient's condition that may otherwise go unnoticed.

The same act, according to Benner and Wrubel, done in a caring or noncaring way may have quite different consequences.[3] Being a physician can never be reduced to mere technique; if this occurs, confusion, frustration and anger are produced. When treatment is effective in the absence of empathy and compassion, patients are always aware that something was missing. I have seen this happen even when the action recommended by the physician saved the patient's life. If treatment is *not* effective and there is an absence of empathy and compassion, patients are hurt and angry and may even look for some form of redress.

Noncaring treatment has been studied.[4] Noncaring interactions were interpreted as the health professional not being available to the patient, but rather being there just to get the job done. Patients felt dehumanized, devalued, angry, and fearful when care was hurried and distant.

Caring is always understood within context. When the situation calls for technical proficiency, then technical proficiency (swift, accurate action) is experienced as caring. When the patient situation does *not* require technical action, then expressive action such as recognizing the patient's uniqueness is identified as caring.[5]

Benner and Wrubel take a phenomenological position on the necessity and meaning of caring. Phenomenology, they say, is a style of thought — a special awareness that a health professional must have for a practice that is more than an adequate technical comprehension of bodies and persons. "To grasp the meaning of illness for humanity, the patient, and the humanity of the patient is more than simply to 'identify' with the patient or to feel compassion.

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Editor's Desk

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It is to appropriate one of the conditions for professional judgement inspired by human wisdom."[6] Caring involves appreciation of what it means to be human, and this understanding requires a mature wisdom. A wise and discerning physician recognizes that medical treatment given without personal care and concern is not truly "caring" for the patient.

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Letters to the Editor

The Other Side of The Story

Dear Dr. Sessions:

"Doctor bills have increased four times faster than the cost of living." This misstatement was made on a prime time national broadcast of Cable News Network (CNN), January 2, 1990. One can speculate whether or not this lie reflects sloppy or sensational journalism on the part of CNN. However, such an inflammatory headline may well have been purposely released by officials at the Health Care Financing Administration (HCFA) hoping to prejudice the American public and consumers of medical care against physicians.

Federal health planners and some private third party payors see physicians as a handy scapegoat upon which to blame the persistent yearly rise in the cost of health care for Americans. As physicians, we cannot allow enthusiastic planners or malignant managers of health care to bombard our congressmen, our patients, or the voters and tax payers of the country with such prejudicial falsehoods.

Amidst the rhetoric and headlines that particularly frighten consumers and purchasers of health care, resides a fact and a fallacy. While the cost of hospital stay has risen 9,000% over the past 40 years, physicians' incomes have not risen at all. When compared to the consumer price index since 1975, the average physician in 1986 earned just under $3,000 per year more than he did in 1975. While the cost of living has doubled over the same 10-year interval, physicians' earning power increased only one half of one percent per year.*

It is time for physicians to politely but firmly remind our detractors that several factors have driven up the cost of health care:

1. Indigent or under-compensated care is something for which we all must pay in the end.

2. Quantum leaps in technology provide employment for countless non-physician men and women as indirect or direct supporters of health care.

3. The aging of America's population and demand for services and procedures commands an increasing amount of resources.

4. Frivolous litigation and America's mindless tort system demonstrate that "perfect results are barely good enough."

Before we accept condemnation as physicians or members of America's health care team, remember that the average physician's wages have not even kept pace with the costs of such necessities as housing, food, transportation, or education. To be sure, most physicians enjoy their life's work and are rewarded for their services. However, to blame physicians for the cost of quality medical care in America is as unfair as blaming soldiers or airmen for the giant defense budget.

Each and every one of us has a responsibility to politely but firmly refute our detractors. The statesman, voters, and patients we care for must hear the other side of the story.

Respectfully,
W. Mike See, M.D.

* The AMA Center for Health Policy Research; *Socioeconomic Characteristics of Medical Practice*, 1986.

■

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President's Page

by Marvin A. Singleton, M.D.
MSMA President

In testimony presented on October 10, 1989 before the Missouri Silver Haired Legislature, MSMA President Marvin A. Singleton, M.D., expressed his views on mandated Medicare Acceptance of Assignment.

Silver Haired Legislature

Mr. Chairman, Ladies and Gentlemen:

I would like to thank you for allowing me to appear before you to discuss Mandated Medicare Acceptance of Assignment. As President of the Missouri State Medical Association, the largest association in the State of Missouri representing practicing physicians, it is an honor and a challenge to present the viewpoints of practicing physicians. I have been working on behalf of the elderly for many years as an advocate of my patients and of all elderly in Missouri, having been appointed to the Governor's Advisory Council on Aging by Governor Ashcroft. At the recent Governor's Conference on Aging and the meeting of the Advisory Council, I was elected First Vice-Chairman. I hope that many of you will review and become familiar with the recommendation made to the Governor regarding long-term care. It involves a year-long study performed in some detail. I have also been given the task of investigating private funding for the Silver Haired Legislature through my membership on the Silver Haired Foundation, of which I am Vice-Chairman.

With this background in mind, I would like to take a look at what is being done in Missouri regarding Medicare and the practicing physician, and perhaps mention several reasons why the elderly in Missouri do not want a mandated acceptance of Medicare benefits in Missouri.

This is a time of change for the health care industry as well as for the elderly, the largest growing segment of our population. Increases in technology mean increases in cost, fairly to unfairly borne by those who receive the services. The upheaval over catastrophic health care and the desires of not just the elderly but all citizens of the United States regarding health care needs, certainly indicates the need for perhaps a "wait and see" attitude.

Since inception in 1965, Physicians Services under Medicare were in Part B. Costs for Part B on inception were to be shared 50-50 by the federal government and the participants. In 1974, federal law created two categories of physicians under Medicare Part B, non-participating physicians and participating physicians. Those who accepted 100% assignment of Medicare payments as payment in full, were called participating physicians. They cannot bill a Medicare patient for any amount over the Medicare-allowed charge for that service. The federal government, in response to budgetary requirements, has fluctuated in its Medicare-allowed charge in direct response to the deficit needs of the federal government and *not* to the needs of the elderly or to the experience and training of the physicians providing the services. Non-participating physicians may accept the amount between the physician's actual charge and Medicare's "approved amount." Additionally, the federal government continues to tinker with

continued on page 132

President's Page

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physicians' reimbursements and imposes a fee freeze on all new charges. Now the amount that may be charged to a patient may not exceed "the maximum allowable actual charge" (MAAC); calculated for each physician and each service based on a base period approximately four years ago, which has little regard to realistic increases for cost of doing business, insurance, inflation, etc.

During the first quarter of 1989, January through March, 78% of all charges for physician services were submitted on asssignment. In Missouri this has continued to increase. More than 86% of all physicians accept some claims on assigned basis and 63% of all Medicare claims in Missouri were submitted on assigned basis. Of the 86% of physicians accepting some claims on assigned basis, 40% of Missouri physicians accept assignment on *all* Medicare patients. The remaining physicians in Missouri have elected to accept assignment on nearly one half of their cases. As you can see, physicians in Missouri desire to retain some of the freedoms left in the health care system. Four out of 10 physicians are participating physicians, who accept assignment on all Medicare patients; the remaining Missouri physicians accept assignment on Medicare patients half of the time.

Some of the problems with mandatory assignment deal with the inability of the federal bureaucracy to respond to the changing needs of the recipients and physicians. Existing federal limits on reimbursement of physician services, created a fee-freeze on all charges across the board, not only freezing outrageously high prices, but freezing physician charges which were more than reasonable and have continued to be frozen, with little increase for four years. The existing limits presently imposed upon the physicians by the federal bureaucracy and its intermediaries give all Medicare patients an average 40% discount on actual charges. There is virtually no way to appeal the approved charges and sometimes these "reasonable" fee allowances do not even cover office overhead costs. Even when physicians do not accept assignment on Medicare, they are limited by MAAC as to what they can charge. No physician can charge a Medicare patient "as much as he wants." It is prohibited by federal law with severe penalties of prison and daily fines.

Now, let's talk about physicians' fees. Only 18% of the senior citizens' out-of-pocket expenses go to physicians' fees, and most of that is covered by Medicare. As I have seen in the long-term care study of the Governor's Advisory Council on Aging, and in my experience with acute care hospitals and pharmaceuticals, the major thrust of senior citizens' expenses go to these other institutions, and perhaps the health care system itself needs revision. Physician fees may, in particular cases, be out of line; most are not. To recommend a system that ties a physician's income and reimbursement to a federal bureaucracy and a federal debt that has grown from $700 million in 1980 to $3.1 trillion in 1989, is a recommendation that will result in reimbursement rates that are intolerable to the physician's practice. Of the 24 million Medicare enrollees, only one million (40%) had financial liability in access of $1,000. Eighty-three percent (83%) of those had actual out-of-pocket expenditures of less than $500.

The primary reason mandatory assignment should not be recommended is that it very likely will reduce access to care. It is my concern that mandatory assignment would force many physicians, especially those in the rural areas, to stop treating the elderly, to move, or to close their offices. A 1983 Health Care Financing Administration (HCFA) study found that mandatory assignment would actually reduce assignment rates, because some physicians would withdraw from Medicare entirely; increase patients' out-of-pocket cost; and limit access to many services, especially specialized services for the elderly. In Massachusetts, where mandatory assignment is in effect, there is a critical shortage of physicians in Cape Cod and in areas, primarily rural, heavily populated by seniors. As the number of physicians treating the elderly dwindles, there will be a significant decrease in the amount of time surviving physicians spend with patients.

Mandating Medicare acceptance of assignment in Missouri would be putting physician reimbursements at the whim of a federal bureaucracy dealing with an out-of-control deficit. The same services and benefits would still be expected; this would not be wise or realistic. The access for rural and inner city Americans would be drastically affected. I, and the Missouri physicians believe the focus should be on assuring that the financially needy have ample protection against illness and ensuring that the Medicare Program remains fiscally sound. I believe the interest of the elderly can be promoted and improved by working *with* Missouri physicians. Only by understanding our problems and yours, through this process, can we expect to benefit from the health care system. Missouri physicians have for years been the advocate of the elderly, and we hope to maintain that role. I urge your committee to take these reasons into consideration and not support mandatory assignment of Medicare benefits in Missouri.

Thank you again for the opportunity to appear before you.

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April 5-8, 1990

Tan-Tar-A Resort
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Progress Notes —

MSMA Progress Notes, is your connection to the activities of the Missouri State Medical Association. It lets you know about the happenings on the legislative front and in the health care field that affect you and your practice. Look for it monthly in your mailbox!

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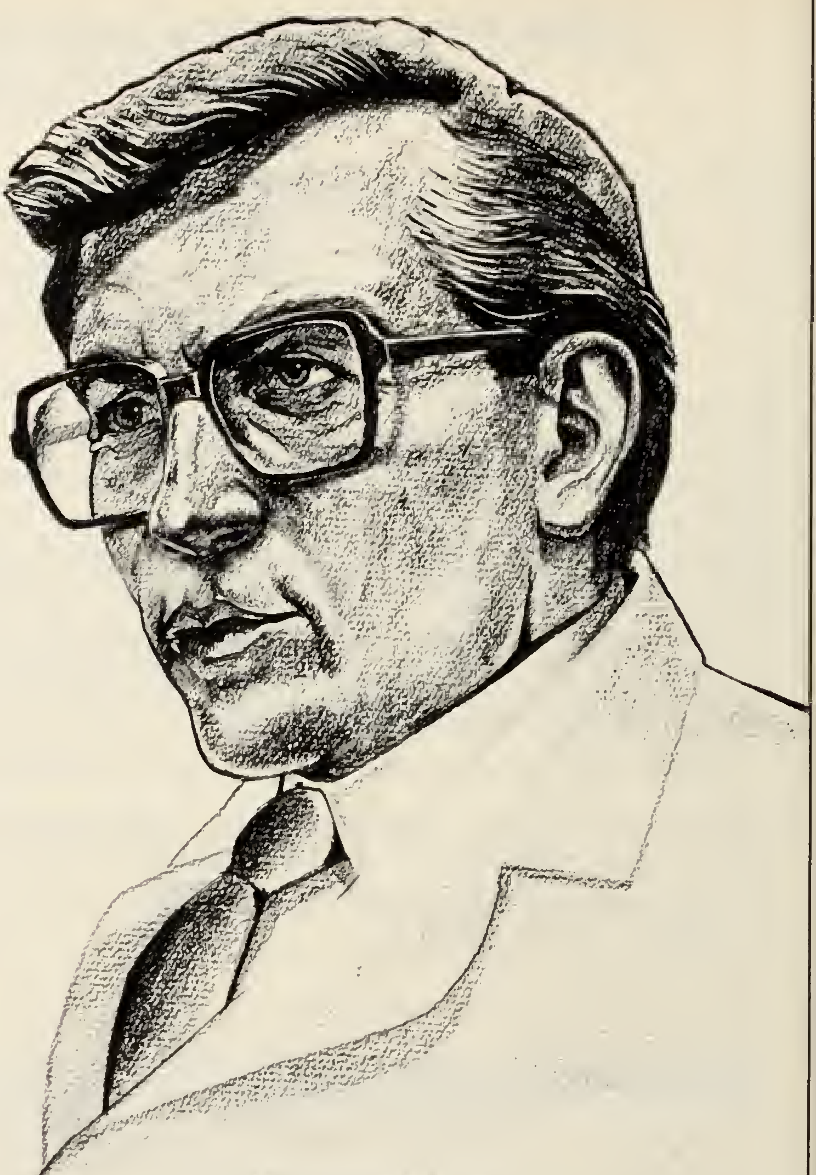

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PRACTICE MANAGEMENT

by Janice K. Woerth, Ph.D.

Do you have a question for Dr. Woerth? Include your questions along with your name, address and phone number and send them to:

Janice K. Woerth, Ph.D.
Practice Management
c/o Missouri Medicine
P.O. Box 1028
Jefferson City, MO 65102
Or call her direct:
816/587-1125

Although your name will not be used in the journal, please include your name and phone number so that Dr. Woerth may contact you if she needs additional information to answer your question.

Dear Dr. Woerth:

I have learned that some of my colleagues are allowing patients to pay for their medical services with credit cards. How do you feel about the use of credit cards for payment of medical services?

O.L.

Dear O.L.:

I highly recommend including credit cards as a means of patient payment, especially for high cost medical services. I feel that credit cards can help a medical office improve collections. When patients pay with their credit card for services on the day they were rendered, the burden of collecting payment becomes the responsibility of the credit card company. This eliminates the need to send monthly statements to those patients using credit cards and saves the practice the time and expense of monthly billing.

The medical practice must pay a credit card users fee to the credit card company for use of their card. Your banker can tell you exactly how much this fee is. Generally it is calculated as 3-4% of the amount billed.

The U.S. Department of Commerce has found that payments that are 30 days past due are worth 97 cents on the dollar and payments 60 days past due are only worth 90 cents on the dollar. Payments that are over 60 days past due continue to be devalued and at six months past due the payment is only worth 67 cents on the dollar. While reimbursement from a credit card company is only worth 96-97 cents on the dollar because of the user's fee, the practice does not find their dollar value continuing to shrink because the credit card company promptly reimburses the medical practice for its charges. I have found in some practices that the credit card company reimburses electronically to the practice account within 24 hours of the charge.

Credit card payment is not a panacea for all medical practice collections problems. However, I have learned from many practices that use credit cards, the opportunity to use a credit card is appreciated by the patients and has solved some collection problems.

Dear Dr. Woerth:

How important is it to get a new CPT book each year? It seems like the codes that we use the most, office medical services (office visits), never change. Are there really enough changes in the 1990 CPT book to warrant the expense?

D.G.

Dear D.G.:

Each year there are several hundred changes, additions or deletions to the CPT book. The new codes are indicated by a black dot preceding the code number and the codes with changes in definitions are indicated with black triangle preceding the code. While you are correct that some codes rarely change, it is important that any change be reflected on insurance claims forms if reimbursement for those services is to be paid.

The 1990 CPT does include some major changes, especially in office medical services and emergency room services. In the 1990 CPT, office medical services now includes other outpatient medical services, an addition to the definition of the code. For emergency room services, physicians not assigned to the emergency room are now directed to use codes 90000-90080, medical and other outpatient medical services, in addition to the appropriate code 99062-99065 for emergency care facility services. Correct use of these codes is essen-

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Practice Management

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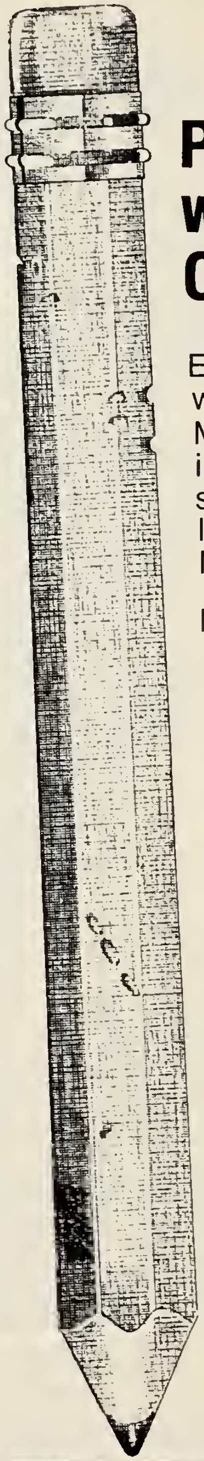
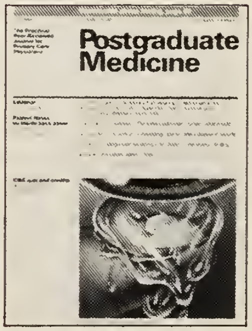
tial for reimbursement for services rendered by the physician.

There were other noteworthy changes and additions made in the 1990 CPT. A new section entitled Case Management Services was added (see codes 98900-98922). Although some of these codes existed before with different numbers and slightly different definitions, the new codes clarify the exact use of these codes. The definition of modifier -51 has been expanded beyond procedures performed in the same operative session to include multiple procedures performed in the same day.

I recommend that all practices purchase a new CPT book each year and skim through the book to note any change to codes used regularly by the practice. The office encounter form, superbill and/or fee sheet should be compared with the new CPT to make sure that all codes are correct. The incorrect use of CPT codes costs medical practices thousands of dollars in lost revenue each year. By using the latest CPT codes appropriately, you can reduce the likelihood that revenue is being lost in your practice due to incorrect CPT codes. ■





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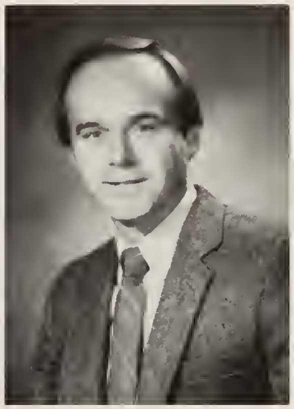
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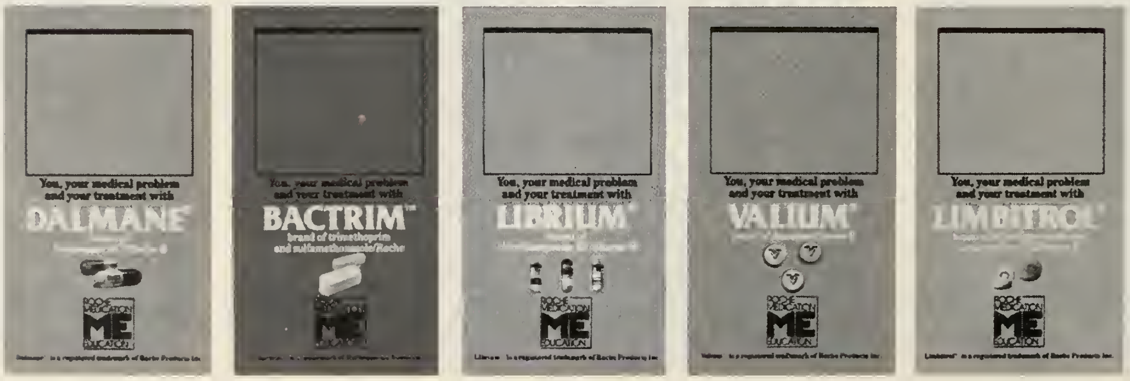
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SPECIAL SERIES

Neurological Aspects of AIDS

David B. Clifford, M.D.
St. Louis, Missouri

The neurological complications of acquired immunodeficiency syndrome (AIDS) can be severe. The author presents an overview of the most common neurological conditions HIV infected patients are susceptible to and stresses the importance of early diagnosis.

The epidemic of acquired immunodeficiency syndrome (AIDS) has resulted in substantial changes in the spectrum of illness encountered in medical practices of all kinds. The neurologic consequences of this infection are significant. Yet, because of the unusual nature of the first identified systemic illnesses and their rapidly fatal course, it was several years before the neurologic manifestations of the illness were identified.

The reports of unusual occurrences of *Pneumocystis carinii* pneumonia and Kaposi's sarcoma in the gay population on both coasts of the United States were the heralding signs of the AIDS epidemic. Since that time, the catalog of related infectious complications of the loss of cellular immunity associated with human immunodeficiency virus (HIV) infection continues to grow. In addition, the epidemic has spread throughout the world and into other subgroups, including those who abuse drugs, hemophiliacs and others who have received blood products, heterosexuals, and children. It is now clear that the nervous system is involved both primarily by the infection, and secondarily by opportunistic complications of the disease.

Neurologic Consequences of HIV Infection

It is clear that HIV itself enters the brain, most likely at an early stage of infection. The presence of the virus has been documented in the brain and peripheral nerve by a number of techniques, including viral culture of biopsy tissue, in situ hybridizations demonstrating proviral DNA sequences, hybridization studies revealing viral RNA and identification of actual retroviral particles. The virus is located primarily in macrophages within the central nervous system, including characteristically multinucleated giant cells. In later stages of infection, pathologic evidence of the viral infection is found in up to 90% of autopsy specimens from AIDS patients, giving an indication of the ubiquitous impact of the virus within the nervous system. The clinical spectrum of neurologic complications of HIV-related infection may be roughly divided into the AIDS dementia complex, an AIDS related myelopathy, and peripheral neuropathies. In addition, patients may appear to have aseptic meningitis at seroconversion or at other times during the course of the infection. In no case is the precise mechanism by which the virus induces these syndromes fully understood.

AIDS Dementia Complex

The most common and serious direct complication of HIV infection is an encephalopathy, which has been termed the AIDS dementia complex (ADC). While this condition may be present initially, it is most commonly seen in patients with advanced immunodeficiency. The disorder may be confused with either a depressive reaction to having such a serious infection, or a response to medical illness. However, most investigators believe that the encephalopathy is directly due to the viral infection. The encephalopathy results in a slowing down of mental and motor function. The mental slowing results in loss of concentration for normal activities, loss of interest in reading, TV or hobbies, and problems with memory, which require more list-making and more supervision. Eventually, a substantial number of these patients may slow to the point that they are mute.

Motor slowing affects the gait. In particular, spasticity develops, with slowed gait and movements, decreased coordination, and eventual loss of bladder control. The mental changes are more variable. A minority of these patients may experience psychotic behavior, but after a time, depressed mood and affect, and labile emotions are typical. When this disorder is defined, it is often an indicator of a poor prognosis, and death will occur in a year or less. This prognosis may be somewhat modified with successful antiviral therapy, however, as increasing evidence suggests that treatment with zidovudine has a positive impact on this condition.

Establishing the diagnosis of ADC requires ruling out other causes for impaired brain function. Thus, consideration of metabolic, infectious, and neoplastic insults to the brain must be appropriately evaluated by careful history, physical examination, brain imaging and spinal fluid analysis. Proper medical and psychological support is required to assure that neurologic performance is not further deteriorated by factors in these areas. Unfortunately, brain imaging and spinal fluid studies do not allow absolute confirmation of ADC, since there is no fixed or characteristic pattern associated with ADC in these tests.

The brain is generally moderately atrophic and may show white matter changes on MRI scanning, which is the most sensitive test for structural changes. The spinal fluid generally shows somewhat elevated protein, normal glucose, and few mononuclear cells. Elevated B_2-microglobulin levels and viral related protein (p24) in the spinal fluid correlate with degree of dementia, but are not diagnostic.

Vacuolar Myelopathy

A second complication that often accompanies the ADC, but may also occur alone, is a myelopathy which pathologically mimics subacute combined degeneration of the cord. In one study, about 25% of autopsied AIDS patients had some element of the myelopathy, and it no doubt explains much of the leg weakness and ataxia these patients experience. At times the condition progresses rapidly, resulting in marked disability due to impairment of dorsal column and lateral column function.

In making the diagnosis, the clinician should also consider the possibility of infection with another retrovirus, the human T-lymphotropic virus, type I (HTLV-1), which is now clearly associated with syndromes of tropical spastic paraparesis reported from Martinique, Jamaica, Columbia, Trinidad and Tobago, and the Seychelles, and with progressive paraparesis in other parts of the world. In some parts of the world, co-infection with HIV and HTLV-1 is becoming increasingly common. Infection with HTLV-1 may be acquired by transfusion.

Peripheral Neuropathy

The third area of the nervous system commonly involved in the HIV infection is the peripheral nervous system. The extremely common involvement occurs in two peaks. Early in HIV infection, before substantial immunodeficiency occurs, there is an increase in the rate of inflammatory neuropathies, which present as Guillain-Barre syndrome. Currently it is recommended that HIV testing be carried out in patients presenting with Guillain-Barre syndrome (GBS). The course of the inflammatory neuropathy is generally similar to that of GBS in uninfected individuals, in that improvement can be anticipated, and may be speeded in severe cases by the use of plasmapheresis. The more common neuropathy seen in HIV patients is a distal, axonal type neuropathy which affects sensation more than motor skills, and occurs quite commonly with advancing disease. Vibratory sensation thresholds are diminished distally, and there is a distal gradient to the sense of sharpness. Painful paresthesias, which may be quite refractory to treatment, are frequently experienced by these patients. Symptomatic treatment with drugs useful in neuropathic pain syndromes (amitriptyline, carbamazepine, baclofen) is suggested, but as in other cases of neuropathic pain, the results are inconsistent at best. Unfortunately, the preliminary evidence suggests that this condition, unlike the dementia, does not improve or stabilize with zidovudine therapy.

Myopathic disease also occurs, in particular, muscle wasting. In some cases investigators have suggested this is a toxic complication of zidovudine therapy, but in other cases, the myopathy appears to have been associated with the HIV infection itself.

Secondary Neurologic Conditions

Infectious complications in HIV patients are both common and important, since they are frequent and potentially treatable. In general, a high level of suspicion must be maintained to diagnose these problems early, and intervention generally must be chronic. However, it is possible to successfully treat infectious complications, and thus protect and improve the quality of life for these patients.

Toxoplasma gondii represents a frequent cause of multiple mass lesions that develop in the brains of immunodepressed patients. The diagnosis is suggested by subacute development of focal neurologic signs and sometimes by seizures. Lesions are seen in either brain CT scanning or brain MRI scans, and often show enhancement with contrast material. When typical lesions are seen, it is often possible to give empiric therapy with pyrimethamine and sulfadiazine and follow stabilization and improvement in the clinical and radiographic picture over a period of several weeks. Atypical lesions, solitary lesions, or those not responding to therapy should be biopsied to allow specific therapy as early as possible.

Cryptococcal meningitis represents a second common neurologic complication of immunodeficiency. A high index of suspicion is required, since typical meningeal signs are more often than not absent. Patients most often present with fever, sometimes with a change of mental status or headache, but often without a stiff neck. Consequently, fever evaluations in the presence of any neurologic signs require evaluation of the spinal fluid. Cryptococcal antigen is measurable in the CSF and in the serum, even when other spinal fluid parameters are little changed from normal. Chronic treatment for this disorder is required. Amphotericin B remains the most effective therapy, but lifelong suppressive treatment is needed.

Other viral infections also complicate the course of HIV infected patients and sometimes contribute to neurologic morbidity. A papovavirus is the etiologic agent of **progressive multifocal leukoencephalopathy (PML)**, an otherwise extremely rare neurologic infection, which is being seen with increasing frequency in AIDS patients. This multifocal white matter disease shows a relentless progression, with no therapy having been shown to improve the outlook. In addition, herpes viruses including the **cytomegalovirus (CMV)**, herpes simplex and varicella zoster are commonly a problem for AIDS patients. CMV is a serious cause of blindness due to retinitis. This complication can be treated with ganciclovir. In addition, myelitis and encephalitis are sometimes caused by these viruses. Cutaneous zoster or shingles is quite common in the HIV infected population. In general, acyclovir is recommended to limit the complications of the herpes viruses which do respond to it.

Syphilis is another infection with serious implications for the nervous system, for which a high index of suspicion is required. The current HIV infected population includes many highly sexually active individuals, many of whom have had other sexually transmitted diseases including syphilis. It has been suggested that syphilis which has been inadequately treated, or untreated, may progress to neurosyphilis in a much more aggressive manner in this population. It is well known that syphilis may present in a wide variety of ways and thus consideration of this diagnosis is advised in the evaluation of neurologic problems in HIV patients.

An increasing problem associated with HIV is widespread **Mycobacterial disease** including M. tuberculosis and M. avium intracellulare. It is important to be constantly wary of tuberculosis patients to avoid spreading this problem to other healthcare workers and the public. Also, CNS tuberculosis is a life threatening diagnosis if not promptly recognized and aggressively treated, and thus consideration of the possibility and when necessary empiric treatment until more definitive diagnosis becomes available may be required.

Primary **CNS lymphoma** is another serious neurologic complication of HIV infection and immunosuppression. It occurs in 3-5% of AIDS patients, and thus must seriously be considered in the differential of focal lesions in this population. Since lymphoma is not uncommonly multicentric in this population, it must be considered in the differential with toxoplasmosis and PML. While the tumor may respond to radiation therapy, the outlook remains very poor for patients developing CNS lymphoma.

The HIV infected population has also been observed to have increased frequency of strokes and transient neurologic deficits. It is uncertain the precise mechanism of many of these events. The strokes may be either hemorrhages or ischemic infarcts, and may relate to vasculitic changes associated with HIV or one of the associated conditions. Transient neurologic deficits are also possible manifestations of vasculitis in these patients. Too little is known of the frequency and etiology of these events to make firm recommendations regarding required evaluation, but searches for potentially treatable causes of stroke are reasonable in these generally young patients.

Summary

HIV infected patients are susceptible to many serious neurologic complications both as a result of the HIV infection within the brain and due to secondary infections and tumors associated with the immunodeficiency. Because many of the infections are potentially treatable, it is important to maintain a high index of suspicion to diagnose them at an early point when a favorable outcome may be possible. Referral to treatment centers for experimental therapy may be required for the more severe complications which still have a poor prognosis.

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The Author

DAVID B. CLIFFORD, M.D.

Dr. Clifford is Associate Professor of Neurology, Department of Neurology, and an investigator at the AIDS Clinical Trials Unit, Washington University School of Medicine, St. Louis, Missouri.

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SPECIAL SERIES: Chronic Disease Reports

Implications of a Statewide Survey of Arthritis in Missouri

Marsha L. Dubbert, R.N.
Jefferson City, Missouri
Gordon C. Sharp, M.D., Donald R. Kay, M.D.,
Judith L. Sylvester, M.A., and Ross C. Brownson, Ph.D.,
Columbia, Missouri

The authors discuss the major findings of a survey intended to supply information to the Missouri Arthritis Program in order to reach its goal of improving the health status and quality of life of arthritis patients.

Arthritis and disorders of the musculoskeletal system are among the most common health problems in Missouri. They affect all age groups and are associated with a great deal of disability, impairment, and handicap. A wide variety of conditions are included under the term arthritis, ranging in severity from relatively minor aches and pains to chronic disabling conditions such as rheumatoid arthritis. Although arthritis is occasionally fatal, it usually means the diminishing of an individual's quality of life and economic productivity.

Arthritis is America's number one crippling disease. While the average arthritis patient experiences less disability than sufferers of some other chronic diseases, there are more persons affected by arthritis than by these other illnesses. Arthritis accounts for 500 million days of restricted activity and 26 million days lost from work. It is the leading cause of industrial absenteeism. It is also listed as the second leading reason, after heart disease, for receiving disability benefits.[1] It has been estimated that, because of arthritis, $14 billion is lost annually in wages and medical bills.[1]

Mortality rates among those with rheumatoid arthritis are higher than in the general population.[2,3] This higher mortality has been attributed to the disease itself, and to associated respiratory conditions, infections, and gastrointestinal complications.

In 1976, a broad spectrum of people began working toward a state plan to address the arthritis problem in Missouri. The plan began with a regional arthritis needs assessment, a process that evolved over 10 years. With information gathered from work groups, site visits, and testimony from public hearings, the State Task Force on Arthritis prepared a plan to address these needs. Legislation officially establishing the Missouri Arthritis Program was enacted in 1984. An advisory board was appointed to assist in implementing the plan.

With the Department of Health, the Advisory Board developed the foundation of the arthritis pro-

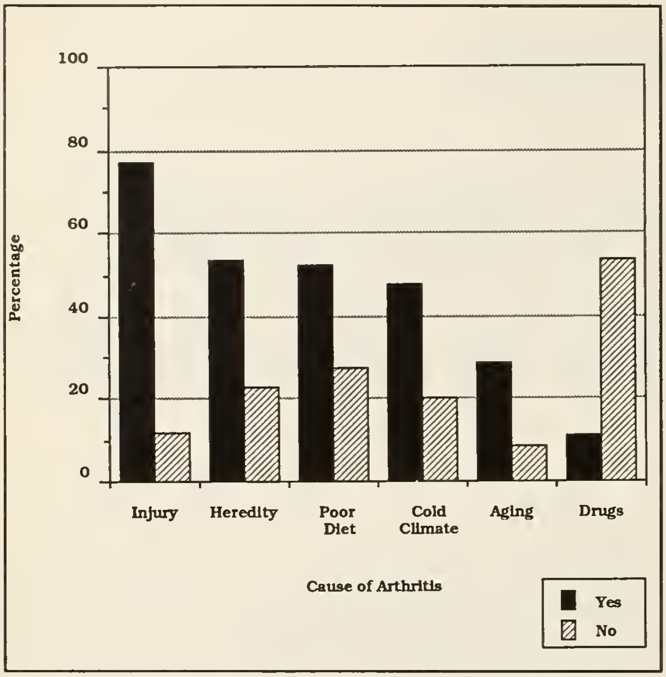

Fig. 1. Knowledge of the causes of arthritis, Missouri, 1987.

gram, a network of Regional Arthritis Centers (RACs). Mandated to be established in each of seven regions, RACs are designed to be local sources of specialized health care and education for rheumatic disease patients. The long-range goal of RACs is to make the best diagnostic, treatment, and rehabilitation services accessible to all persons in Missouri with arthritis.

In 1985, the Department of Health designated and funded eight RACs, selected through merit review. These RACs are located in Kansas City, St. Joseph, Springfield, Columbia, Kirksville, and Cape Girardeau, with two in St. Louis.

The Missouri Arthritis Advisory Board, in an effort to learn more about the magnitude of arthritis and the attitudes, knowledge, and care-seeking behaviors of those affected by the disease, authorized a survey, which is reported here.

Methods

To learn more about arthritis in Missouri, a telephone survey was conducted from April 1987 through May 1987 by the Media Research Bureau of the University of Missouri-Columbia School of Journalism. The study subjects were a stratified random sample of Missourians. A random digit dialing technique[4] was used to select eligible households. To gather representative information from each of the seven designated regions of the state, a minimum of 10 households were interviewed in each of Missouri's 115 counties.

The survey took between five and 10 minutes to complete and included questions on 1) the prevalence of arthritis; 2) knowledge of the symptoms, causes, and treatment of arthritis; 3) where patients seek treatment; 4) sources of information on arthritis. (A copy of the survey instrument is provided at the end of this article.) Information was obtained from both the individual responding to the survey and from other household members. A total of 2,533 households was contacted for the survey, with a response rate of 68% and a sampling error of less than 2%.

Results

Sixty-one percent of the responding residents lived in rural areas or communities of less than 10,000. Twenty-one percent resided in cities of more than 50,000. Of the respondents, 20% had not completed high school, 37% were high school graduates, and 41% had attended college. The majority of those responding were in the middle income bracket; however, 26% reported household incomes below $15,000.

Approximately one out of four respondents (27%) reported having physician-diagnosed arthritis. Reported prevalence was higher in women (38%) than men (28%), and more common in older population groups (68% among those over 65) as compared to younger age groups (12% in 18- to 34-year-olds). By extrapolation, an estimated 1.26 million Missourians suffer from arthritis. The Missouri prevalence of 33.6% closely parallels the national estimate of 32.6%.[5]

Of the total surveyed, 83% said they have a regular doctor. Sixty-seven percent of these persons travel less than 10 miles for their doctor visits, and 4% travel more than 50 miles for their medical care. Thirty-three percent of the respondents said their doctors are specialists. Nearly 55% of them indicated their doctors specialize in family practice or internal medicine. Almost 72% of those with physician-diagnosed arthritis said their arthritis was diagnosed by their regular doctors; 13% reported being diagnosed by an arthritis specialist. Sixty-four percent with diagnosed arthritis did not know the specific type of arthritis. Only 43% were currently under the care of a physician, suggesting their arthritis was either totally self-managed or, more likely, not under proper treatment at all. Another group of respondents indicated they had some symptoms of arthritis, but had never been told by a doctor that they had arthritis.

The respondents were asked about what they believed the cause of arthritis to be. Their responses are shown in Figure 1. The answers most frequently given were injury (77.1%), heredity (53.5%), and poor diet (52.0%). In reality, the causes of arthritis are not clearly understood, but they are believed to include heredity and some viruses.[6]

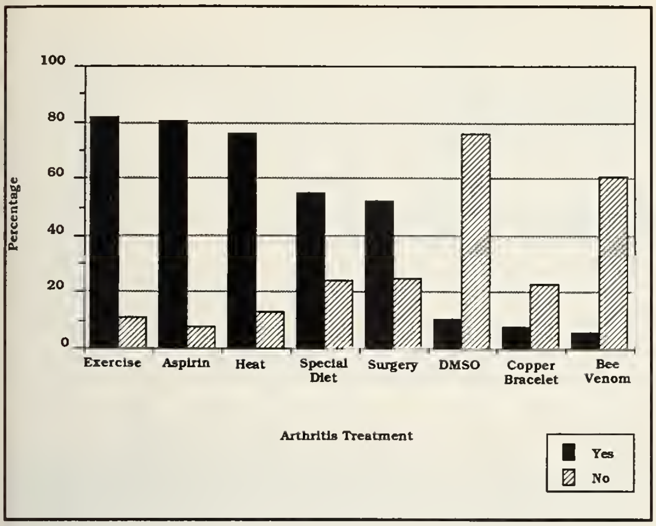

Fig. 2. Beliefs about the treatments for arthritis, Missouri, 1987.

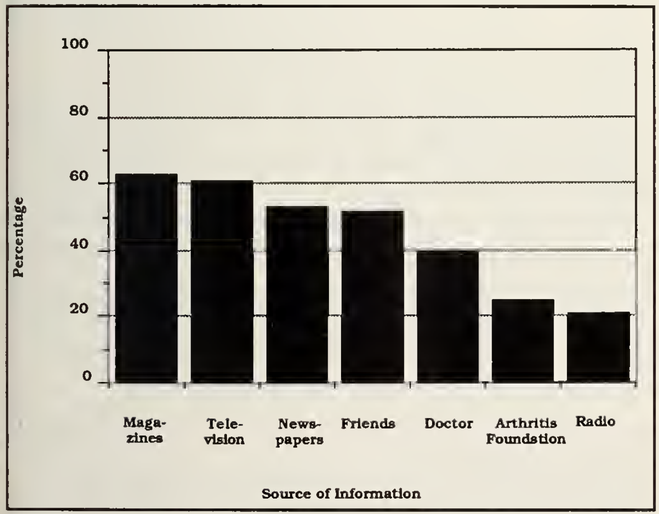

Fig. 3. Sources of information on arthritis, Missouri, 1987.

Seventy-one percent of respondents said arthritis could be helped by treatment, but responses to questions about effective treatment methods showed some misconceptions (Fig. 2). Respondents considered exercise (82.0%), aspirin (80.6%), heat (75.5%), special diet (55.0%), and surgery (52.6%) as "most effective." Among these factors, heat and diet alone are not recognized as effective arthritis treatments.[6]

Most respondents (92%) said they would seek treatment if they developed arthritis symptoms, but more than 70% said their symptoms would be "moderate or severe" before they would seek treatment. Most (82%) would go to their regular doctor for treatment while 10% would seek the care of a specialist.

Respondents reported obtaining arthritis information from a variety of sources (Fig. 3). The mass media were the major source of information, with television cited by almost 75%. Of this group, 78% said advertisements were sources of information, while 61% cited news and information programs. In contrast, more reliable sources, such as physicians (40%) and the Arthritis Foundation (23%), were cited far less frequently. Despite the geographic and demographic diversity of the seven RAC regions, there was little variation among respondents in the regions in the reported prevalence of arthritis, access to and use of a regular physician, sources of arthritis information, and beliefs about arthritis causes and effective forms of treatment.

Comment

The following major findings of the survey have served to direct projects presently being carried out by RACs: 1) the majority of persons with physician-diagnosed arthritis do not know their specific type of arthritis; 2) there are important misunderstandings regarding the causes of arthritis; 3) the general public is seriously misinformed regarding the nature and types of available, effective treatments and sources for optimal care; 4) arthritis is severe before patients seek care; and 5) the mass media (television, newspapers and magazines) are likely to be the most effective mechanisms for influencing arthritis-related knowledge and attitudes.

Regional Arthritis Center public and professional education projects have begun to address these problems. Television and newspapers are being used to disseminate information. In addition, each RAC is mandated to provide outreach services to medically underserved communities. As RACs seek to extend services throughout their regions, rheumatologists and other arthritis specialists are being recruited and satellite facilities are being developed. These are steps toward achieving the Missouri Arthritis Program's goal of improving the health and quality of life for arthritis patients by providing care and support services as close as possible to the patient's home.

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The Authors

MARSHA L. DUBBERT, R.N.
GORDON C. SHARP, M.D.
DONALD R. KAY, M.D.
JUDITH L. SYLVESTER, M.A.
ROSS C. BROWNSON, Ph.D.

Ms. Dubbert is a Program Administrator in the Bureau of Health Promotion of the Missouri Department of Health in Jefferson City. Dr. Sharp is the Director of Immunology/Rheumatology in the Department of Medicine at the University of Missouri School of Medicine, Columbia. Dr. Kay is the Director of Central Missouri Regional Arthritis Center at the University of Missouri-Columbia. Ms. Sylvester is the Director of the Media Research Bureau at the University of Missouri, Columbia, and Dr. Brownson is the Director of the Division of Chronic Disease Prevention and Health Promotion, Missouri Department of Health, Columbia.

Reprints

Ross C. Brownson, Ph.D.
Division of Chronic Disease Prevention
and Health Promotion
Missouri Department of Health
201 Business Loop 70 West
Columbia, Missouri 65203

Statewide Arthritis Survey Questions

Part 1.
Do you have a regular doctor? *(if no go to part II)*
In which town/county does your regular doctor practice?
Approximately how far do you travel to see your doctor?
Is he or she a specialist? *(if no, go to part II)*
What is his/her specialty?
Family Practice/GP; Ob-Gyn; Surgery; Internal Medicine; Arthritis/Rheumatology; Cancer/Oncology; Diabetes; Hypertension/High Blood Pressure; Urology; Heart/Cardiology; Other (Specify)

Part II.
We need to collect information concerning your household and those who have arthritis. Names are not needed.
Including yourself, how many persons reside in your household regularly?
How many are over 18 years of age?
How many of the adults are males?
How many are females?
How many are 18 years or below?
How many are males?
How many are females?
Of all adults in household, how many females have arthritis?
How many males have arthritis?
What is your age?
Respondent's sex: male female
Do you have arthritis?
Was your arthritis diagnosed by a physician?
What type(s) of arthritis do you have?
Do any (other) adult females in your household have arthritis?
What are their ages? (youngest to oldest)
Was their arthritis diagnosed by a physician?
What type(s) of arthritis do they have?
Do any other adult males have arthritis?
What are their ages? (youngest to oldest)
Was their arthritis diagnosed by a physician?
What types of arthritis do they have?
How many children in the household have arthritis?
What are their ages?
Was their arthritis diagnosed by a physician?
What types of arthritis do they have?

Part III. (if person interviewed has diagnosed arthritis)
You said you have a diagnosed case of arthritis. Was the physician who diagnosed it a: regular (family/personal) doctor, arthritis/rheumatology specialist, chiropractor, someone else (specify)
What symptoms did you have that caused you to see a doctor for diagnosis and treatment of your arthritis?
Are you currently under a doctor's care for your arthritis?

Part IV.
Can you list any of the symptoms of arthritis?
In your opinion, can arthritis be helped by treatment?
If you began developing symptoms of arthritis, would you be likely to seek treatment?
Do you think your symptoms would be mild, moderate or severe before you sought treatment?
If you had arthritis, to whom would you first go for treatment: regular (family/personal) doctor, arthritis/rheumatology specialist, chiropractor, someone else.
How likely do you think it is that you will develop arthritis?

Part V.
How serious an illness would you say arthritis is?
From which of the following people or media have you received information about arthritis?
Friends, Relatives, TV *(If TV* — news/information programs, ads)
Radio, newspapers, magazine, books, physician, arthritis foundation, other
None of the above/no source

Do you agree, disagree or don't know about the following: Arthritis is a natural part of growing old, you can inherit arthritis, arthritis can be caused by injuries, arthritis can be caused by infections, arthritis can be caused by cold or wet climates, arthritis can be caused by poor diet, most people who get arthritis eventually become crippled from it, arthritis can be caused by drugs. (if yes to drugs, what drugs do you think can cause it — cocaine, cortisone, can't identify

As far as you know which of the following would help treat arthritis? aspirin, copper bracelets, heat applied to area, antibiotics, exercise of the joint affected, bee venom, massage the joint affected, vitamins, special diet, surgery of the affected joints, dimethylsulfoxide (DMSO), gold shots, none of the above/can't be treated.
If you wanted more information about arthritis where would you obtain the information?
Do you know if there is a regional arthritis center in your area?
If yes, where is it?

Acute Fatty Liver of Pregnancy

Jerry M. Obritsch, M.D., and Michael S. Cardwell, M.D.
Columbia, Missouri

The authors illustrate the importance of early diagnosis, prompt delivery and intensive management of acute fatty liver of pregnancy (AFLP) in achieving the optimal maternal-fetal outcome.

Acute fatty liver of pregnancy (AFLP) is one of the most serious conditions seen in the third trimester of pregnancy. It is life-threatening, causing maternal multi-system organ failure. Maternal-fetal outcome is directly dependent upon correct, timely diagnosis and assertive management. The following case report illustrates the presenting symptoms, successful management and outcome of AFLP.

Case Report

A 32-year-old, white, married primigravida had her estimated date of confinement calculated based on her last menstrual period and confirmed by a fetal crown-rump length measurement at ten weeks' gestation by obstetric ultrasound examination. Maternal serum alpha fetoprotein testing was performed at 17 weeks, with normal findings. The patient's prenatal laboratory studies included the following: blood type O negative, antibody negative, serology nonreactive, rubella immune, HBsAG negative, hemoglobin 12.9 gm%, and hematocrit 38%. Her Papanicolaou test showed negative results.

An ultrasound examination at 21 weeks' gestation revealed an average for gestational age fetus. At 28 weeks, an elevated maternal blood glucose of 182 mg% was recorded. A three-hour oral glucose tolerance test revealed a fasting blood glucose of 94 mg%, one hour — 197 mg%, two hour — 184 mg%, and three hour — 150 mg%. Therefore, the patient was placed on a 2,000-calorie American Diabetes Association diet, which controlled the patient's gestational diabetes mellitus. At 34 weeks, the patient complained of a racing pulse over the preceding two weeks. Her pulse was recorded at 140/min, and blood pressure was 130/88. She had no history of cardiac or thyroid disease. The patient's only medication was prenatal vitamins. A thyroid profile was normal and cardiologic consultation revealed no obvious cause for the mild tachycardia. At 36-4/7 weeks, the patient complained of contractions at her routine prenatal visit. A nonstress test was reactive with irregular contractions present. A sterile vaginal exam revealed the cervix to be closed and long. The baby was determined to be in the breech presentation by Leopold's maneuvers, confirmed by ultrasound.

She was seen again at 37-4/7 weeks for her routine prenatal visit and was noted to have blood pressure of 140/88, 1+ (30 mg%) urine protein and 2+ reflexes bilaterally. The diagnosis of pregnancy induced hypertension (PIH) was made, and she was admitted for stabilization prior to planned delivery by Cesarean section. Upon admission to the labor and delivery suite, no fetal reactivity was seen on the external utero-fetal monitor and late fetal heart rate decelerations were noted with spontaneous contractions. A diagnosis of fetal distress was made and the patient underwent an emergency Cesarean delivery via a low transverse uterine incision under epidural anesthesia. A 3260-gram live male infant was delivered in the single footling breech presentation, with Apgar scores of 2 and 5, at 1 and 5 minutes respectively. There were no intraoperative complications.

Approximately four hours later, in the recovery room, the patient appeared jaundiced and began to bleed profusely from her wound. Laboratory studies revealed evidence of disseminated intravascular coagulation (DIC): prothrombin time (PT), 22 seconds; partial thromboplastin time (PTT), 73 seconds; platelet count, 109,000/mm^3; fibrinogen, 80 mg%; and fibrinogen degradation products greater than 40. Profuse bleeding at the incision continued with formation of a subcutaneous hematoma. It was decided to evacuate the hematoma after the patient was stabilized with blood and clotting factors. Approximately 200 mL of blood was evacuated from the wound while the patient was under general anesthesia. Postoperatively, the patient was stabilized over two days in the surgical intensive care unit. Liver function studies showed a serum glutamic-oxaloacetic transaminase (SGOT) of 148 U/L, and serum glutamic-pyruvic transaminase (SGPT) of 609 U/L. Renal function studies revealed 1+ urine protein; creatinine, 2.7 mg%; blood urea nitrogen (BUN), 17 mg%; and a creatinine clearance of 32 mL/min. On postoperative day eight, the patient's jaundice had resolved and her urine output had returned to normal. She was discharged. A follow-up visit 10 days later showed her to be in good condition. Subsequently, over the next six weeks, her liver, renal and hematologic parameters returned to normal.

With the findings of disseminated intravascular coagulation, elevated levels on liver and renal function studies, and jaundice, the diagnosis of acute fatty liver of pregnancy (AFLP) was made. A rare disease of pregnancy, AFLP was first described in 1934.[1] It has been reported to occur once in every 13,328 deliveries.[2] Onset of the disease usually occurs in the third trimester, when the patient develops nausea, vomiting, headache, epigastric pain, and jaundice. Rapid multiorgan failure occurs, and if time elapses without proper patient management, fetal and maternal mortality can be high. As recently as 1980, maternal mortality was reported to be as high as 75%, with fetal mortality as high as 85%.[2] The etiology of AFLP remains unknown.

Acute fatty liver of pregnancy is often accompanied by the clinical characteristics of pre-eclampsia or eclampsia. One literature review reported that 46% of patients with AFLP have concurrent pre-eclampsia.[4] The disease occurs primarily in the third trimester and is seen more often in the primigravida and in multiple gestations.[4] The patient initially has symptoms of nausea, vomiting, general malaise, and abdominal pain, which may vary considerably in site.[5,6] Jaundice occurs in over 90% of patients,[4] but is accompanied by pruritus in only 33% of cases, according to Pockros et al.[2] An altered sensorium is common, and was reported in 98% of all patients with AFLP in one study.[7]

On physical examination, patients with AFLP who are pre-eclamptic as well may show hyper-reflexia, clonus, and edema of the face and hands. The most consistent finding in patients with AFLP is jaundice seen in more than 90% of cases.[4] Tachycardia was present in 54% of patients with AFLP in one study.[15] Patients are usually afebrile.[4] Abdominal examination usually reveals pain upon palpation in the epigastric area, right upper quadrant or both.[5,6]

Laboratory studies may be profoundly abnormal and may reflect the state of severity and progression of the disease, especially if pre-eclampsia or eclampsia is also present. The partial thromboplastin time and prothrombin time are elevated and fibrinogen is decreased with a concomitant increase in fibrinogen degradation products.[2,6] Leukocytosis and thrombocytopenia are often present.[15] Anemia may occur as a result of the severe disseminated intravascular coagulation (DIC), with intravascular hemolysis.[4] Hyperbilirubinemia and elevated liver enzymes usually are found. Both direct and indirect bilirubin fractions are elevated.[2] Renal function is reduced, with proteinuria and impaired creatinine clearance.[16]

The differential diagnosis of AFLP includes hepatitis A, B, and non-A non-B, chronic liver disease, drug ingestion, chemical exposure, alcoholic liver disease, and cholestasis of pregnancy. Definitive diagnosis of AFLP can be made by live biopsy, where centrilobular microvesicular fatty change is seen with periportal sparing. Bridging necrosis is absent.[17,18,19] Although the most common symptom of AFLP is jaundice, the most common cause of jaundice in pregnancy is viral hepatitis, which comprises approximately 40% of cases.[8] It is the authors' opinion that the diagnosis of AFLP may be made clinically without liver biopsy, especially if platelets and clotting factors are profoundly depressed, by evaluating presenting symptoms, physical examination, laboratory studies, and by ruling out other possible causes in the differential diagnosis.

Treatment of AFLP is immediate delivery of the fetus and intensive medical management of each affected organ system. If vaginal delivery cannot be accomplished in a timely fashion, the authors feel Cesarean section should be carried out as soon as the patient is medically stable. Liver biopsy may be performed intra-operatively if coagulopathy is either absent or has been corrected, and is required to make a histologic diagnosis of AFLP.[5] General anesthesia with potential hepatotoxic inhalants should be avoided because of the hepatic dysfunction,[9] and a subarachnoid block employed if no coagulopathy is present. Peripartum, the patient should be carefully monitored in an intensive care unit. Multi-organ system failure requires consultations with gastroenterology, hematology, and nephrology services. The coagulopathy associated with AFLP may be corrected by administering fresh frozen plasma or cryoprecipitate. Because antithrombin III is profoundly depressed in AFLP[10] as a result of DIC and impaired hepatic clotting factor synthesis, antithrombin III concentrate administration has been suggested. However, the therapy has not been proven beneficial in randomized studies.[10] Hypoglycemia may occur, requiring close blood glucose monitoring.[2,17] Cimetidine and antacids are useful if there is evidence of gastrointestinal bleeding from esophagitis or gastritis.[4] Magnesium sulfate therapy is needed to treat concurrent pre-eclampsia or eclampsia; the magnesium sulfate blood levels must be carefully monitored if there is evidence of renal impairment. Fluid restriction and strict intake/output monitoring must be maintained. Pulmonary edema from pneumonitis or fluid overload may be treated with oxygen, furosemide, and central monitoring with Swan-Ganz catheterization. Antibiotic prophylaxis is necessary because one of the common causes of death in AFLP is infection.[3] Antibiotic blood levels need to be carefully monitored because of impaired hepatic and renal function.

After delivery of the fetus and intensive medical management in the peripartum period, complete recovery usually occurs. Hyperbilirubinemia, impaired hepatic and renal function, maternal coagulopathy and risk of infection may continue to be present for several months following delivery; thus, close monitoring must continue. Subsequent pregnancies do not appear to be at increased risk for AFLP.[11,12] Oral contraceptives should not be prescribed postpartum.[4]

Conclusion

Early diagnosis of AFLP, prompt delivery, and intensive medical management have resulted in vastly lower maternal and fetal mortality rates.[9,13] In one recent study,[14] 10% fetal mortality and no maternal deaths were reported. Diagnosis of AFLP may be made clinically without liver biopsy. The biopsy may be performed intra-operatively if required for histologic diagnosis. Intensive management of AFLP cannot be overemphasized in achieving the optimal maternal-fetal outcome.

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The Authors

JERRY M. OBRITSCH, M.D.
MICHAEL S. CARDWELL, M.D.

The authors are from the Department of Obstetrics and Gynecology, at the University of Missouri School of Medicine, Columbia.

Reprints

Jerry M. Obritsch, M.D.
Department of Obstetrics and Gynecology
University of Missouri School of Medicine
N610 Health Sciences Center
1 Hospital Drive
Columbia, Missouri 65212

An Update On Chymopapain For Treating Lumbar Disc Ruptures

Lee T. Ford, M.D.
St. Louis, Missouri

The author's experience in the use of chymopapain for the lysis of ruptured disc indicates that the drug is a valuable alternative to surgery.

Low back pain is a common ailment. Eighty percent of us are said to have at least one episode in our lifetime. Low back pain with sciatica is not unusual and can be very disabling. In my opinion and experience, the most common cause of disabling low back pain with sciatica is a lesion of an intervertebral disc.

Initial treatment for symptoms from a lumbar disc lesion should almost always be conservative. Treatment should include rest by limitation of activities and bedrest if necessary, appropriate symptomatic medications and physiotherapy, back supports, and time. Unless significant neurological deficit is present (paresis or loss of bladder or bowel control), laminotomy and discectomy should be advised only after conservative management of three to six weeks' duration has failed to bring relief.

The last conservative measure of treatment is chemonucleolysis with chymopapain. It is used in lieu of open surgery and should be advised only if an adequate trial of conservative measures has failed. Definite diagnosis should also be established by radiological studies – either lumbar myelography followed by CT, or magnetic resonance imaging.

The disc rupture that responds best to chemonucleolysis with chymopapain is a "contained" disc rupture, in which the fragment of disc is still covered by annulus, a fibrous membrane, or posterior longitudinal ligament, and has not become an extruded free fragment or sequestered.

The use of chymopapain for ruptured lumbar disc is the brain child of Dr. Lyman Smith, an orthopedist from Elgin, Ill. After animal investigations at Baxter Laboratories, he began using the drug, trade name Discase, on patients in 1963.[1] Dr. Smith coined the term chemonucleolysis for the intradiscal injection of chymopapain. Before my first trial of the drug, some animal experimental work by a neurosurgeon in Cleveland was repeated. Based on these experiments on cats done at St. Louis City Hospital, I concluded that the drug should never be injected into the intrathecal space or brain. Injection into the epidural space, in the liver, or about blood vessels caused no damage.[2]

Chymopapain was used experimentally under FDA supervision in the United States and Canada by 65 investigators in more than 17,000 patients from 1963 to 1975. In these patients, satisfactory results were obtained in 72%. In 0.6% of cases, anaphylaxis resulted, and two patients died. I performed the procedure in 854 of the patients in this investigational study at Barnes and Missouri Pacific Hospitals, St. Louis.

Of the 854 patients, 73% had a satisfactory result. In this group 127 patients had some medical legal involvement, either compensation or common law, and only 59% of these had a satisfactory result. Of 173 patients who had had previous surgery at the same or another disc, with some resultant scarring, only 50% had satisfactory results from chymopapain. Out of 589 patients in the group who had ruptured disc or discs, no previous surgery and no medical legal involvement, there were 79% satisfactory results.

Early in the study, if patients didn't experience satisfactory relief in the first three to four weeks, I advised and usually did a laminectomy. The operative rate on these first 300 patients was 29%. It was later learned that the patients should be observed over a longer period of time and eventually this rate dropped to about 9%. Of the patients in the group who had laminectomies performed after failure of chymopapain injection, a 66% satisfactory rate was obtained.

Following a controversial double blind study in Washington, D.C.[4] the Baxter company withdrew the drug from further investigation in August 1975. Of interest, the Canadian equivalent of our FDA released the drug for use in that country. From 1975 to 1983, thousands of United States citizens traveled to Canada for chemonucleolysis (including more than 400 referred from St. Louis). As far as we know, there were no reports of deaths or serious neurologic injuries in the vast Canadian experience.

In 1979 Lyman Smith and his nephew organized Smith Laboratories. This company manufactured a slightly different variety of chymopapain under the trade name Chymodiactin. Under the company's sponsorship a double blind study was done from 1980-1982 by seven investigators on 108 patients.[5] I was an investigator, and we had a 73% success rate in the patients injected with chymopapain, and a 20% success rate with patients who received the saline placebo. Two of these placebo patients who received saline are still relieved of their symptoms, to my knowledge.

Another experimental study of chymopapain injections sponsored by Smith Laboratories was conducted in Illinois on 1,498 patients who had ruptured lumbar discs, with a success rate of 87%.[6] Thirty-five neurosurgeons and orthopedic surgeons participated. There were two deaths from anaphylaxis.

There are three directions in which a needle can be inserted into a lumbar intervertebral disc — midline transdural; posterolateral, with the needle going through the laminal opening; or lateral, with the needle lateral to the apophyseal joint and lamina. This lateral approach should be used for all needle insertions for the injection of enzyme into an intervertebral disc.

Discograms were done on almost all patients in the original multicenter study. I still use discograms in all injections. The discogram will confirm the previous x-ray diagnosis and show where the enzyme is going to go when injected into the disc. Under no circumstance should enzyme be injected intrathecally. During fluoroscopy, if the contrast medium travels intrathecally, then no enzyme should be injected. Should some of the contrast go epidurally, this is not a contraindication to injecting chymopapain into the disc.

In 1982 a committee from the American Academy of Orthopaedic Surgeons and the American Association of Neurologic Surgeons organized a one-day instructional course, which was given to more than 7,000 orthopedic surgeons and neurosurgeons in various cities across the country. In addition to information about the drug and its use, accurate needle placement was stressed. Each participant was allowed to practice needle insertion on a mannequin with x-ray control using the lateral approach.

Quite a few of the doctors who took the course returned and began actively using the enzyme. Some of their use (and misuse) had disappointing results with some serious complications.

In using chymopapain now, it is important the patient have a chymo-fast (fluorallergosorbent) test to be certain there is no allergy to the enzyme. This has been done on all our patients since 1983. Since 1985 we have not had an allergic reaction at Barnes Hospital following negative test results. Diphenhydramine and cimetidine are administered 24 hours before the injection, and a megadose of steroid is given just prior to injection so that any reaction will be less severe. It is also recommended that the injection be done under supplemented local anesthesia with monitoring by an anesthesiologist. Under local anesthesia, one is less likely to injure a nerve root since the patient quickly reports when a nerve root is touched. This would not be possible under general anesthesia. Also, under local anesthesia if an anaphylactic reaction occurs, the patient has an impending "feeling of doom" before pulse or blood pressure changes occur.

It is also recommended that a test dose of 0.2 mL of chymopapain be injected into the disc and the patient be observed for 10-15 minutes for a possible allergic reaction before injecting the treatment dose. In my experience, three patients had a reaction from the test dose and did not receive the treatment dose. Each patient's symptoms improved sufficiently over the succeeding 5 to 6 months that surgery was not needed for the ruptured lumbar disc.

Since its release in November 1982, some 127,000 vials of the enzyme have been sold, with case reports on more than 76,000 patients. Consequently, this is one of the most studied and researched procedures I am aware of today. In the period of 1982-1984, there were 48 serious neurological complications reported following the use of chymopapain, including six cases of acute transverse myelitis and 19 deaths. From 1984 to 1986 there were 10 cases of serious neurological complications, with four deaths. Six of the deaths in the experience were from anaphylaxis. There have been no cases of transverse myelitis since 1984. Since 1986 there has been only one case of neurological deficit, and this patient recovered. The majority of serious complications have occurred with doctors who had done 10 injections or fewer.

By comparison, there is a report covering complications of 33,000 virgin laminectomies done in the United States in 1980 in 959 hospitals. There were 22 deaths, for a rate of 6 per 10,000. The death rate in the chymopapain experience is 2.1 per 10,000. Another report compares a death rate from surgery of 1 in 1,000 to 1 in 5,600 for chymopapain. The serious neurologic complication rate for surgery is estimated at 1 in 360 operations compared with 1 in 2,000 for chemonucleolysis. The disc space infection rate in surgery is estimated at 1 in 380 patients, compared with 1 in 1,300 for chymopapain.

Since the release of the drug, I have injected 651 additional patients at Barnes Hospital from 1983 to 1989 with chymopapain for ruptured lumbar disc or discs. Overall there has been a 77% satisfactory result. Patients are told before the injection that they have about 3 chances out of 4 of a satisfactory result and about 9 chances out of 10 that they may be able to avoid a laminectomy for their condition.

Fifty patients have had associated spondylolisthesis in the lumbar spine with the disc lesion, and 76% of them have had a satisfactory result. Those who are not helped by the injection usually must have an operation for the spondylolisthesis, but the chymopapain injection does not interfere with the subsequent surgery.

Eighty-two patients in the group had an associated spinal stenosis. Of these 72% had satisfactory relief and did not need surgery for the stenosis. Those without relief from the chymopapain usually required decompressive laminectomy to relieve symptoms from the stenosis.

Four of the patients in the group experienced worsening of a pre-injection neurological deficit following chemonucleolysis, requiring decompressive laminectomy. These patients have recovered after the laminectomy. In my experience with chymopapain there have been no paralyses and no deaths. Two patients who had unsuccessful percutaneous automated discectomy have obtained relief of their symptoms following chymopapain injection.

Of the 1505 patients there have been two disc space infections, both of which resolved with rest, immobilization and antibiotics and did not require surgery. Four patients in the early series done under general anesthesia developed thrombophlebitis and a pulmonary embolus, but recovered with appropriate treatment. There were 14 patients out of 1,505 who had allergic reactions. All recovered.

In my experience, chymopapain is a valuable and useful drug, but it must be used properly. It is used in lieu of surgery in properly selected patients who have failed an adequate trial of conservative treatment. The patient must have a negative chymo-fast test. There must be accurate needle placement via a lateral approach with the needle in the nucleus pulposus. The patient should be pre-medicated with antihistamine, H_2 blockers and steroids, and the procedure is more safely done under supplemented local anesthesia.

The late Dr. Fred Reynolds, a very critical observer, stated, "This drug is as good as surgery, but no better."

I think chymopapain is as good as and even has some advantages over surgery and I continue to use it in appropriate cases of contained disc rupture following the above criteria.

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The Author

LEE T. FORD, M.D.

Dr. Ford is professor emeritus from the Division of Orthopedic Surgery, Washington University Medical Center, St. Louis

Reprints

Lee T. Ford, M.D.
Division of Orthopedic Surgery
Suite 11300 West Pavilion
One Barnes Hospital Plaza
St. Louis, Missouri 63110

Intra-Abdominal Hemorrhage and Shock Due to Uterine Fibroid

Malinda H. Bell, M.D.
Kansas City, Missouri

The author describes a rare, but potentially life-threatening case of hemorrhage from a uterine fibroid. Prompt surgical management was essential for making the diagnosis and for saving the patient's life.

Emergency physicians frequently encounter hypotensive patients who require a systematic search for a cause. Similarly, first-time seizures are generally first evaluated in the emergency department. The following case report is an unusual presentation of new onset seizure (presumably hypoxic in origin) and hemorrhagic shock with hemoperitoneum resulting from a uterine fibroid. Uterine fibroids rarely produce hemorrhagic shock or intra-abdominal bleeding.[1-3] The emergency physician should be aware of this rare, but potentially life-threatening condition, particularly in a hypotensive female patient with a negative pregnancy test.

Case Report

A 39-year-old woman with no medical history of seizures experienced three brief tonic-clonic seizures within a 24-hour period. All lasted less than 30 seconds and produced urinary incontinence. The husband witnessed all three events but did not call an ambulance until the patient's level of consciousness did not improve following the third seizure.

The patient was hypotensive and postictal when the paramedics arrived. They were unable to palpate radial or brachial pulses, but the carotid pulse was 150 beats per minute and respiratory rate was 22 per minute. Military antishock trousers (MAST) were applied and a 500 mL intravenous bolus of normal saline was infused en route to the hospital.

On admission to the emergency department her vital signs were blood pressure, 98/64 mm Hg; pulse, 96; respirations, 20; and temperature, 36.5°C. General examination revealed the patient to be lethargic and pale. The skin was not cool or diaphoretic. Examination of head showed no trauma and was within normal limits. Cardiopulmonary assessment was likewise within normal limits. The abdomen was diffusely tender but most tender in the suprapubic and bilateral lower quadrant areas. No discrete mass was palpable. Despite the patient's altered mental status, rebound tenderness, suggesting peritonitis, was present. A bimanual pelvic examination was performed with the MAST in place, but deflated. Uterine size was difficult to assess due to mild abdominal distention and guarding, but no adnexal masses were palpated. There was a small amount of bright red blood in the vaginal vault. Rectal examination was remarkable only for brown stool that was guaiac-positive, possibly due to contamination by the vaginal contents.

Initially the patient could not provide any historical information. The husband arrived in the department at the conclusion of the examination and supplied additional facts. The patient was $G_3P_2Ab_1$ and had had a tubal ligation several years earlier. She was experiencing rather heavy menstrual flow and this was her fifth day of bleeding. There was no history of missed menses.

The patient had been evaluated at another institution three days prior for a syncopal episode and left lower quadrant pain. She had no history of abdominal trauma, nausea or vomiting. The husband stated she had been told she was anemic and sent home. He was uncertain as to whether a pregnancy test or pelvic examination was performed. She had subsequently developed tonic-clonic seizures, but did not seek medical attention. Her medical history was remarkable only for asthma, for which she used an inhaler as needed.

The working diagnosis was a possible ruptured ectopic pregnancy, but the pregnancy test was negative, even on repeat evaluation. A ruptured hemorrhagic ovarian cyst was considered, but bedside ultrasonography proved only the presence of a tremendous amount of clot formation in the pelvis, and cholelithiasis.

Her first hemoglobin level was 5.7 gm/dL with a hematocrit of 17 gm/dL. White blood cell count was 15.8×10^9/L and platelet count was 237×10^9/L. The PT, PTT and fibrinogen were within normal limits. Serum chemistries were sodium, 143 mEq/L; potassium, 4.3 mEq/L; chloride, 112 mEq/L; bicarbonate, 18; BUN, 20 mg/dL; and creatinine, 1.4 mg/dL.

While awaiting the arrival of the surgical and gynecologic consultants, blood transfusion was initiated, MAST removed, and the patient's condition stabilized. She received a total of three units of packed red blood cells preoperatively. An exploratory laparotomy was anticipated. One consultant requested nasogastric tube insertion, first to rule out a possible bleeding ulcer and also because the patient had begun to complain of "stomach fullness." The gastric aspirate was bile-stained and negative for blood.

The patient's urine output was 25 mL/hr. She was placed on oxygen at 4 L/min via nasal cannula after an ABG on 100% via non-rebreathing mask showed pH, 7.33; pCO_2, 30 mm Hg; pO_2, 484 mm Hg. Prior to transfer to the operating room, her vital signs were blood pressure, 108/60; pulse, 124; and respirations, 24.

At the time of operation, a midline infraumbilical incision was made and a large amount of clot encountered. The clot was evacuated as best as possible and the bowel packed out of the pelvis. Inspection of the pelvic organs revealed a 5 cm subserosal fibroid on the left side of the uterine fundus and a .5 cm intramural fibroid on the anterior uterine surface. The fallopian tubes were remarkable only for the previous ligation. The ovaries were normal in size and the right ovary had a nonhemorrhagic corpus luteum. No source of bleeding was identified.

It was then necessary to extend the incision to inspect the bowel and abdominal contents. Again, a large amount of clot was encountered and removed so that the structures could be visualized. When no bleeding source was found, attention was refocused on the pelvic area. At this time, a small vessel on the surface of the larger, subserosal fibroid was noted to be bleeding. The vessel had been previously seen, but had not been actively bleeding at the time. There was some concern that the bleeding may have been the result of surgical trauma.

Although the upper abdomen was re-explored, the uterine fibroid was ultimately excised from the uterine fundus. The specimen measured 6 cm in diameter and weighed 70 gm. Microscopic evaluation revealed uniform smooth muscle fibers with central areas of degeneration but no cellular atypia or mitotic activity.

The patient's postoperative course was complicated by an ileus that developed on the second day of hospitalization, superficial thrombophlebitis of the left antecubital area, urinary tract infection and mild exacerbation of asthma. Despite these problems, she was discharged from the hospital on the eighth postoperative day with a hemoglobin level of 9.1 gm/dL.

Discussion

Intra-abdominal hemorrhage due to uterine fibroid is exceedingly rare. In fact, there are no reports in the emergency medicine literature and very few in the English language literature.[1-3]

Even when uterine fibroids are discovered incidentally, they are generally not removed unless the patient is experiencing pelvic pain, menorrhagia, metrorrhagia or dysmenorrhea. Fibroids have been associated with infertility and have been known to undergo malignant degeneration. Although pedunculated, subserosal fibroids may torse and produce peritonitis, their usual course is benign and asymptomatic. This case report suggests we may need to rethink the concept of "benign" uterine fibroids.

Another point of interest in this patient was the onset of seizure activity. Obviously, hypotension is not a typical component of seizures, but the differential diagnosis would include drug overdose, CNS tumor, or bleeding. Ultimately, the seizures were thought to be due to the hypoxemia produced by the markedly decreased circulating hemoglobin. No EEG or CT scan was performed.

The triad of abdominal pain, vaginal bleeding and hypotension in a woman of childbearing age always suggests ectopic pregnancy until proven otherwise. The physical examination supported the diagnosis, but was not confirmed with laboratory tests. It was obvious that the emergency physician was unable to make a definitive diagnosis. Operative intervention was lifesaving and allowed the correct and final diagnosis.

Conclusion

This patient represents a rare case report of near-fatal intra-abdominal hemorrhage due to a uterine fibroid. Uterine fibroids are not uncommon and should be kept in the emergency physician's differential diagnosis for abdominal pain and unexplained hemorrhagic shock.

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The Author

MALINDA H. BELL, M.D.

Dr. Bell is a clinical assistant professor at the Department of Emergency Health Services, Truman Medical Center, Kansas City, Missouri.

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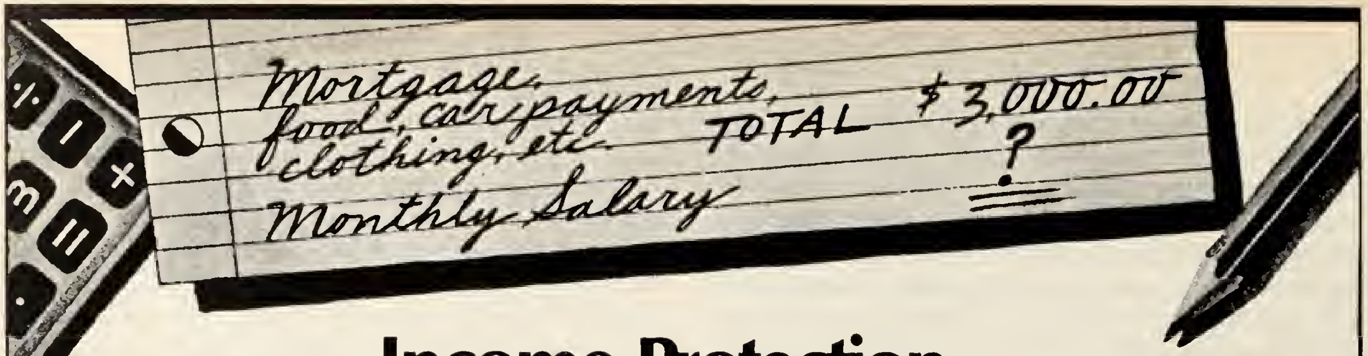
Malinda H. Bell, M.D.
Truman Medical Center
Department of Emergency Health Services
2301 Holmes Street
Kansas City, Missouri 64108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Missouri State Medical Association Financial Statement — 1989

John P. Rucker
CERTIFIED PUBLIC ACCOUNTANT

Council of the
ri State Medical Association:

e audited the accompanying balance sheets of the Missouri State
i Association as of December 31, 1989 and 1988, and the related
ents of revenues and expenses, changes in members' equity and
h flows for the years then ended. These financial statements are
responsibility of the Association's management. My
sibility is to express an opinion on these financial statements
on my audits. I did not examine the financial statements of
ri Medical Insurance Company, an unconsolidated affiliate, the
ment in which, as discussed in Note 5 of the Notes to Financial
ents, is accounted for by the equity method of accounting. The
ment in Missouri Medical Insurance Company for 1987 and 1986
t available reports) were examined by other auditors whose
s have been furnished to me, and my opinion expressed herein,
far as it relates to the amounts included for Missouri State
l Association, is based solely on the reports of the other
rs.

ducted my audits in accordance with generally accepted auditing
rds. Those standards require that I plan and perform the audit
tain reasonable assurance about whether the financial statements
ree of material misstatement. An audit includes examining, on a
basis, evidence supporting the amounts and disclosures in the
ial statements. An audit also includes assessing the
ting principles used and significant estimates made by
ment, as well as evaluating the overall financial statement
tation. I believe that my audits and the report of other
rs provide a reasonable basis for my opinion.

opinion, based on my audits and the reports of the other
rs referred to above, the financial statements referred to in
irst paragraph present fairly, in all material respects, the
ial position of Missouri State Medical Association as of
er 31, 1989 and 1988, and the results of their operation for
years then ended, in conformity with generally accepted
ting principles.

dits were made for the purpose of forming an opinion on the
financial statements taken as a whole. The schedule of
ed expenses for the years ended December 31, 1989 and 1988 is
ted for purposes of additional analysis and is not a required
of the basic financial statements. Such information has been
ted to the auditing procedures applied in the audits of the
financial statements and, in my opinion, is fairly stated in
aterial respects in relation to the basic financial statements
as a whole.

. Rucker
ied Public Accountant

y 26, 1990

MISSOURI STATE MEDICAL ASSOCIATION

BALANCE SHEETS
December 31, 1989 and 1988

ASSETS	1989	1988
CURRENT ASSETS		
Cash and cash investments (Note 2)	$ 914,834	$1,091,275
Marketable securities (Note 3)	580,516	481,109
Accounts receivable	15,671	20,535
Other current assets	1,175	10,135
Total current assets	1,512,196	1,603,054
INVESTMENTS AND LONG-TERM RECEIVABLE		
Common stock of MSMI, Inc., a 100% owned unconsolidated subsidiary, at cost plus equity in undistributed net income (Note 4)	21,484	21,774
Common stock of Missouri Medical Insurance Company, a 10.8% owned affiliate, at cost plus equity in undistributed net income (Note 5)	- 0 -	- 0 -
Note receivable from affiliate (Note 6)	- 0 -	100,000
Total investments and long-term receivables	21,484	121,774
LAND, BUILDING AND EQUIPMENT (Note 7)	677,142	366,194
OTHER ASSETS, cash surrender value	39,077	31,622
	$2,249,899	$2,122,644

LIABILITIES AND MEMBERS' EQUITY	1989	1988
CURRENT LIABILITIES		
Accounts payable and accrued expenses	$ 7,908	$ 7,752
Due to the American Medical Association	88,462	202,480
Due to County Medical Societies	9,393	12,392
Deferred revenue	128,270	231,125
Total current liabilities	234,033	453,749
SUBORDINATED NOTES PAYABLE (Note 8)	590,781	590,781
DEFERRED COMPENSATION (Notes 9)	41,751	36,009
Total liabilities	866,565	1,080,539
MEMBERS' EQUITY	1,383,334	1,042,105
	$2,249,899	$2,122,644

MISSOURI STATE MEDICAL ASSOCIATION

STATEMENTS OF REVENUES AND EXPENSES
Years Ended December 31, 1989 and 1988

	1989	1988
VENUES		
Dues	$1,269,197	$1,268,989
Subscriptions	17,626	17,519
Exhibit rentals	19,600	28,100
Advertising	79,671	62,721
Commissions on collections	23,820	22,263
Investment income (Note 10)	146,329	137,020
Administrative fees and office rent (Note 11)	42,067	36,792
Seminars and workshops	42,696	48,323
Physicians Rehab Program (Note 12)	8,850	20,904
Other revenues	10,346	10,971
Total Revenues	1,660,202	1,653,602
PENSES		
Salaries & fringe benefits (Note 13)	560,064	496,521
Office expenses	103,350	87,749
Travel expense	6,792	10,003
Commissions & committee expense	767	37,781
Depreciation	29,277	25,322
MSMA Auxiliary	8,600	8,508
Journal expense	133,454	140,358
Meeting expense	194,808	188,509
Public affairs	39,418	30,235
Telenet system	1,159	3,791
Consultant & professional fees	14,564	42,055
Public relations program	24,788	30,247
Student awards	1,200	1,200
Tort Reform	21,139	14,542
Miscellaneous	8,057	15,185
Seminars and workshops	40,115	47,348
Physicians Rehab Program (Note 12)	128,080	127,750
Charity Care Program	1,934	- 0 -
Countersuit Program	1,117	- 0 -
Equipment purchases	93,681	13,582
Planning & remodeling	246,544	96,804
	1,658,908	1,417,490
Less capitalized expenditures	(340,225)	(118,484)
Total expenses	1,318,683	1,299,006

STATEMENTS OF REVENUES AND EXPENSES (Continued)
Years Ended December 31, 1989 and 1988

	1989	1988
Excess (deficiency) of revenues over expenses before equity in net income of investments	$341,519	$354,596
Equity in net income (loss) of MSMI, Inc. (Note 4)	(290)	(709)
Equity in net income (loss) of Missouri Medical Insurance Company (Note 5)	- 0 -	- 0 -
Excess (deficiency) of revenues over expenses	$341,229	$353,887

MISSOURI STATE MEDICAL ASSOCIATION

STATEMENTS OF CHANGES IN MEMBERS' EQUITY
Years Ended December 31, 1989 and 1988

	1989	1988
Members' equity, beginning,	$1,042,105	$688,218
Excess (deficiency) of revenues over expenses	341,229	353,887
Members' equity, ending	$1,383,334	$1,042,105

The Notes to Financial Statements are an integral part of these statements.

MISSOURI STATE MEDICAL ASSOCIATION

STATEMENTS OF CASH FLOWS
Years Ended December 31, 1989 and 1988

	1989	1988
Cash flows from operation activities:		
Net income	$ 341,229	$ 353,887
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation	29,277	25,322
(Increase) or decrease in accounts receivables	4,864	4,423
(Increase) or decrease in current assets	8,960	(3,554)
(Increase) or decrease in accounts payable	156	(4,250)
Increase or (decrease) in due to the AMA	(114,018)	103,394
Increase or (decrease) in due to the county societies	(2,999)	(1,359)
Increase or (decrease) in deferred revenue	(102,855)	100,425
Increase or (decrease) in cash surrender value	(7,455)	(6,440)
Increase or (decrease) in deferred compensation	5,742	5,552
Total adjustments	(178,328)	223,513
Net cash provided by operations	162,901	577,400
Cash flows from investing activities:		
Increase in marketable securities	(99,407)	(261,398)
Decrease in MSMI, Inc. investment	290	709
Decrease in note receivable affiliate	100,000	- 0 -
Purchase of equipment	(93,681)	(21,680)
Remodeling	(246,544)	(96,804)
Net cash used investing	(339,342)	(379,173)
Net increase or (decrease) in cash	(176,441)	198,227
Cash at beginning of year	1,091,275	893,048
Cash at end of year	$ 914,834	$1,091,275

The Notes to Financial Statements are an integral part of these statements.

MISSOURI STATE MEDICAL ASSOCIATION

NOTES TO FINANCIAL STATEMENTS

Note 1. Significant Accounting Policies

Dues:

Dues are assessed to members on a calendar year basis. On December 31 of each year, members delinquent in payment of dues forfeit their memberships. The Association may also collect from members, dues and assessments of the American Medical Association and County Medical Societies, which are then forwarded to the respective organizations by the Association. The Association receives a fee for providing this service. Amounts received from members prior to January 1 of each year, which represents the subsequent year's dues, are recorded as deferred revenue.

Valuation of accounts receivable:

Accounts receivable are stated at face amount with no allowance for doubtful accounts. An allowance for doubtful accounts is not considered necessary because probable uncollectible accounts are immaterial.

Income Taxes:

The Association is exempt from federal income taxes under the Internal Revenue Code Section 501(c)(6). Any unrelated business income is subject to income tax.

Property and equipment:

Property and equipment are carried at cost. Depreciation is computed by the straight-line method based on estimated useful lives of the related assets.

Reclassifications:

Certain reclassifications have been made to conform to the 1988 presentation.

Note 2. Cash and cash investments

The balance of cash and cash investments consisted of the following at December 31:

	1989	1988
Petty cash	$ 50	$ 50
Cash in bank, Executive Secretary Account	3,327	2,359
Cash in bank, Treasury Account	12,914	26,535

Note 2. Cash and cash investments (Continued)

	1989	1988
Cash in bank, Physicians Rehab Program	87	- 0 -
Money Market Fund	107,456	47,204
Certificates of deposit	791,000	1,015,127
	$ 914,834	$1,091,275

Note 3. Marketable Securities

Investments in marketable equity securities are carried at the lower of aggregate cost or market at the balance sheet date.

To increase or decrease the carrying amount of the marketable equity securities portfolio to aggregate cost or market at December 31, 1989 and 1988, a valuation allowance was established with a corresponding charge or (credit) to income.

The following is a summary of marketable equity securities at December 31:

	1989	1988
Aggregate cost	$580,516	$481,109
Aggregate market	665,715	522,087
Unrealized gain (loss)	85,199	40,978

Net realized gain of $17,275 and $5,989 on the sale of marketable equity securities were included in revenue for the years ended December 31, 1989 and 1988, respectively.

Note 4. Investments in Unconsolidated Subsidiary

The Association's investment in MSMI, Inc., a 100% owned unconsolidated subsidiary, is carried at cost ($2,000) plus equity in the undistributed net earnings since the date of acquisition. At December 31, 1989 and 1988, the investment in the subsidiary is carried at $21,484 and $21,774 respectively.

Condensed financial data relating to the subsidiary follows:

Note 4. Investment in Unconsolidated Subsidiary (Continued)

For the years ended December 31

	1989	1988
Net current assets	$ 6,484	$ 6,774
Other assets (investments in common stock of Missouri Medical Insurance Company)	15,000	15,000
Less Liablities	- 0 -	- 0 -
Net assets	$21,484	$21,774
Income	$ 4,821	$ 2,767
Expenses	5,111	4,283
	(290)	(1,516)
Income taxes	- 0 -	807
Net income (loss)	$ (290)	$ (709)

Note 5. Investment in Affiliate

The Association exercises significant management control over its affiliate, Missouri Medical Insurance Company (MOMEDICO), by virtue of its ownership of 61.3% of the voting rights of the Company. At December 31, 1989 and 1988, the Association owned 10.8% of the outstanding common stock of its affiliate. The Association's investment in MOMEDICO is carried at cost, plus equity in undistributed net earnings since the date of acquisition. At December 31, 1989 and 1988, the investment in the affiliate is carried at $-0- and $-0-, respectively.

Condensed financial data relating to the subsidiary follows:

For the years ended December 31

	1989	1988
Investments	$35,271,302	$26,884,561
Other assets	2,095,560	2,401,768
Total assets	37,366,862	29,286,329

Note 5. Investment in Affiliate (Continued)

	1989	1988
Reserve for losses & loss adjustment expense	28,185,938	24,794,281
Other liabilities	9,549,927	7,012,487
Total liabilities	37,735,865	31,806,768
Revenues	16,261,339	12,292,020
Expenses	14,109,857	12,291,997
	2,151,482	23
Provision for Federal income tax	731,743	- 0 -
Earnings (loss) before realized gains (loss) on investments	1,419,739	23
Realized gains (losses) on investments	(46)	(23)
Earnings (loss) before extraordinary item	1,419,693	- 0 -
Extraordinary item - use of loss carry forward	731,743	- 0 -
Net earnings (loss)	$ 2,151,436	$ - 0 -

Note 6. Note Receivable From Affiliate

On July 10, 1985, the Association advanced $100,000 to its affiliate, MOMEDICO and received an unsecured convertible subordinated note in the principal sum of $100,000. The note was exchanged June 30, 1988 for note #2. This note bears interest at 1% over Boatmen's Bankshares prime, St. Louis. Payment is subject to approval by the MO Division of Insurance.

Repayment of the note was made in 1989 since MOMEDICO, as calculated at June 30, 1989 and in accordance with accounting principles prescribed or permitted by the Division of Insurance of the State of Missouri, has a minimum capital and surplus of $2,000,000. Principal payments on the outstanding notes since the capital and surplus exceeds $2,000,000 minimum. At this time, the

Note 6. Note Receivable From Affiliate (Continued)

Association has the option of accepting shares of Class A, common stock for 10% less than the mean of the bid and asked market price. However, MOMEDICO may decline such a conversion in the event that less than 150,000 shares are requested for conversion by the note holders. Payments thereafter on nonconverted notes will only be to the extent that the capital and surplus of MOMEDICO, calculated as previously disclosed and at the end of each fiscal year, exceeds the $2,000,000 minimum. MOMEDICO declined to issue additional stock.

Note 7. Land, Building and Equipment

Land, building and equipment consists of the following at December 31:

	1989	1988
Land	$ 83,000	$ 83,000
Buildings	581,704	335,159
Furniture and equipment	280,901	187,221
	945,605	605,380
Less accumulated depreciation	268,463	239,186
	$677,142	$366,194

Note 8. Subordinated Notes Payable

In 1978, the Association formed a wholly owned subsidiary, MOMEDICO to provide professional liability and premises liability insurance for physicians and support technicians practicing in the State of Missouri. Before obtaining professional liability insurance through MOMEDICO, physicians residing in the State of Missouri were required to subscribe to non-interest bearing subordinated notes based upon the physician's underwriting classification. These notes were issued by the Association and the subscriptions were payable over a three year period.

The Association was the sole stockholder of MOMEDICO prior to public stock offering of MOMEDICO in 1980. At that time, the requirement to purchase subordinated notes was eliminated with new policies effective after January 31, 1980.

In connection with the public stock offering in 1980, MOMEDICO assumed, in exchange for 100,815 of the 125,000 shares of the Class B common stock the Association held in MOMEDICO, the face value of the subordinated notes issued and outstanding. MOMEDICO also assumed the balance of the

Note 8. Subordinated Notes Payable (Continued)

installments receivable on the subordinated notes and a bank note payable from the Association. Under an exchange offer made by MOMEDICO, holders of the Association's subordinated note could exchange fully paid notes for Class A common stock at the rate of $20 face value per share.

On October 15, 1980, the Association reassumed all notes not exchanged and also the installments receivable on the unexchanged notes as well as an amount equal to the installments receivable of the bank note payable.

The notes require repayment, only upon the Association's accumulation of in excess of $3,000,000 of members' equity at the end of any calendar year, that the Association has sufficient funds and assets, exclusive of the amount subject to repayment, to permit it to carry on business, and that the repayment be approved by the Council of the Association. Interest may be paid on the notes, but it is at the discretion of the Council of the Association.

Redemption of the notes are provided for in the event of death, disability, retirement of the holder, or if the holder has moved both his person and his practice out of the State of Missouri. However, redemption for such causes may be delayed or refused if the Council determines the Association is not on a financially reasonable basis to make such redemptions.

At December 31, 1989 and 1988, the balance of the subordinated notes payable was $590,781. This amount reflects the face value of the notes reassumed by the Association on October 15, 1980, less the installments receivable on the outstanding notes, and less all redemptions made from 1981 through 1985. In 1985, the Council of the Association placed a moratorium on the redemption of the subordinated notes.

Note 9. Deferred Compensation Plan

The Association has a deferred compensation plan agreement with its Executive Vice-President providing for payments upon retirement, death or disability. The plan agreement also stipulates that a pro-rata settlement of benefits will be made in the event of voluntary termination of employment with the Association.

Note 9. Deferred Compensation Plan (Continued)

At December 31, 1989 and 1988, the Association's liability under the terms of the plan were $41,751 and $36,009, respectively.

Note 10. Investment Income

The following is a summary of investment income for the years ended December 31:

	1989	1988
Interest on cash investments	$ 91,203	$ 83,785
Interest on notes receivable	5,467	10,000
Dividends	32,384	5,499
Realized gain or (loss) on the sale of marketable equity securities	17,275	5,989
Appreciation or (loss) on the valuation of marketable equity securities	- 0 -	31,747
Total	$146,329	$137,020

Note 11. Related Party Transactions

The Association provides administrative services to MSMI, Inc. (a wholly owned subsidiary) and Missouri State Medical Foundation (an affiliate). For providing these services, the Association receives an annual fee from each of the two organizations. For the years ended December 31, 1989 and 1988, the administrative fee assessed Missouri State Medical Foundation was $12,000 and the administrative fee assessed MSMI, Inc. was $3,500 and $- 0 -, respectively.

For the year ended December 31, 1989 and 1988, the Association had an additional amount due of $2,200 and $4,358 from the Foundation for reimbursed expenses.

The Association continued its financial support of the Foundation.

The Association during 1989 and 1988, also provided office space, office furniture and office services for its affiliate, MOMEDICO. In exchange for providing these services, the Association assesses a monthly fee. For the years ended December 31, 1989 and 1988 these were $15,900.

Note 12. Physicians Rehabilitation Program

During 1986, the Association established a Physicians Rehabilitation Program (PRP), the purpose of which is to motivate impaired physicians to voluntarily enter treatment and to provide such a treatment program.

Funding for the program is to be provided by fees assessed to participants as well as from donations received from supportive individuals and organizations.

The following is a summary of the program's revenue and expenses for the year ended December 31, 1989.

	1989	1988
Revenue:		
Participant fees	$ 2,250	$ (396)
Donations	6,600	21,300
Total revenues	$ 8,850	$ 20,904
Expenses:		
Medical director - contracted salary	$ 50,000	$ 54,167
Salary - coordinator and administrative assistant	34,729	40,687
Office expense	12,076	9,308
Secretarial services and office supplies	- 0 -	844
Publications	680	530
Travel	15,831	10,668
Legal and consulting fees	- 0 -	1,845
PHC committee	292	329
Bad Debts	5,125	- 0 -
Facility expense	7,628	272
Lab fees	1,025	6,300
Counselor services	694	2,800
Total expenses	$128,080	$127,750

Note 13. Pension Plan

The Association has a non-contributory defined benefit pension plan covering substantially all of its employees. As of March 31, 1989, the Plan was fully funded with no unfunded accrued liability.

Note 13. Pension Plan (Continued)

A comparison of the actuarial present value of accumulated plan benefits and net assets available for benefits for the plan year ended March 31, is as follows:

	1989	1988
Vested	$380,215	$413,603
Nonvested	1,245	2,259
Total	$381,460	$415,862
Net assets available for benefits	$575,839	$508,730

The average assumed rate of return used in determining the actuarial present value of accumulated plan benefits was 8% for both 1989 and 1988.

The total pension contributions for years ended December 31, 1989 and 1988 were $21,682 and $10,000, respectively.

MISSOURI STATE MEDICAL ASSOCIATION

SCHEDULE OF SELECTED EXPENSES
December 31, 1989 and 1988

	1989	1988
SALARIES AND FRINGE BENEFITS		
Salaries	$461,818	$420,199
Payroll taxes	32,758	29,123
Employees life & disability insurance	5,401	8,713
Employees hospitalization insurance	30,670	24,374
Employees pension plan contribution	26,130	10,000
Deferred compensation plan expense	3,287	4,112
Total salaries and fringe benefits	$560,064	$496,521
OFFICE EXPENSES		
Occupancy expense	$ 16,743	$ 11,952
Office supplies	14,803	10,971
Computer expense	11,808	17,201
Postage	22,974	18,684
Telephone	13,856	12,936
Insurance	7,261	4,393
Taxes, real estate	3,255	2,850
Custodian fees	4,011	2,141
Equipment rental and repair	4,790	3,456
Dues and directories	3,849	3,165
Total office expenses	$103,350	$ 87,749
COMMISSIONS AND COMMITTEES EXPENSES		
Commissions:		
Commission on Medical Economics, Third Party Medicine and Governmental Relations	$ - 0 -	$ 326
Commission on Continuing Medical Education	386	520
Commission on Interspeciality Medicine	206	- 0 -
Commission on Medical - Legal Affairs	111	- 0 -
Total commissions expenses	703	846

SCHEDULE OF SELECTED EXPENSES (Continued)
December 31, 1989 and 1988

	1989	1988
COMMISSIONS AND COMMITTEES EXPENSES (Continued)		
Committees:		
Committee on Planning	- 0 -	257
Committee on Legislative Affairs	64	122
Medicaid Project	- 0 -	29,868
Medassist	- 0 -	5,047
Medicare Voluntary Acceptance	- 0 -	1,641
Total committee expenses	64	36,935
Total commissions & committee expenses	$ 767	$ 37,781
MEETING EXPENSES		
Meetings:		
Annual session	$ 71,865	$ 73,911
Council	47,599	56,742
AMA delegate's expenses	69,421	50,258
Resident Physicians Section	872	- 0 -
Young Physicians Section	2,223	- 0 -
Student Section	(861)	- 0 -
Discretionary Council Fund	2,027	1,725
Hospital medical staff	1,662	5,873
Total meeting expenses	$194,808	$188,509

Missouri State Medical Foundation Financial Statement — 1989

John P. Rucker
CERTIFIED PUBLIC ACCOUNTANT

To the Board of Directors of
Missouri State Medical Foundation

I have audited the accompanying statements of assets and fund balance on a modified cash basis of Missouri State Medical Foundation as of December 31, 1989 and 1988, and the related statements of revenues, expenses and changes in fund balance on a modified cash basis for the years then ended. These financial statements are the responsibility of the Foundation's management. My responsibility is to express an opinion on these financial statements based on my audit.

I conducted my audit in accordance with generally accepted auditing standards. Those standards require that I plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. I believe that my audits provide a reasonable basis for my opinion.

As described in Note 1 of the notes to financial statements, the accompanying statements are prepared on the modified cash basis of accounting and, accordingly, are not intended to be presented in conformity with generally accepted accounting principles.

In my opinion, the financial statements mentioned above present fairly the assets and fund balance of the Missouri State Medical Foundation as of December 31, 1989 and 1988, and its revenues, expenses, and changes in fund balances for the years then ended, in conformity with the Foundation's modified cash basis of accounting policy, as described in Note 1 of the notes to financial statements.

John P. Rucker
Certified Public Accountant

January 26, 1990

2009 East McCarty
Jefferson City, MO 65101
(314) 635-3543

Res 1111 Moreau Dr
Jefferson City, MO 65101
(314) 635 3544

MISSOURI STATE MEDICAL FOUNDATION

STATEMENTS OF ASSETS AND FUND BALANCE
(Modified Cash Basis)
December 31, 1989 and 1988

ASSETS

	1989	1988
Cash	$ 816,267	$ 682,947
Loans receivable, less allowance for doubtful accounts of $38,489 and $38,683 (Note 2)	1,244,566	1,250,741
Equipment, less accumulated depreciation of $5,103 and $2,551	1,275	2,551
	$ 2,062,108	$ 1,936,239

LIABILITIES AND FUND BALANCE

	1989	1988
Accounts Payable	$ - 0 -	$ 4,358
Fund Balance	2,062,108	1,931,881
	$ 2,062,108	$ 1,936,239

MISSOURI STATE MEDICAL FOUNDATION

STATEMENTS OF REVENUES, EXPENSES, AND CHANGES IN FUND BALANCE
(Modified Cash Basis)
Years Ended December 31, 1989 and 1988

	1989	1988
REVENUES		
Interest on student loans	$ 88,678	$ 105,847
Interest on cash investments	54,314	34,467
Contributions etc.	5,766	7,221
Total Revenues	148,758	147,535
EXPENSES		
Administrative (Note 3)	12,000	10,000
Professional	883	2,654
Printing and meeting expense	1,317	1,704
Provision for loan losses (Note 2)	2,401	2,297
Miscellaneous	654	154
Depreciation	1,276	1,276
Total expenses	18,531	18,085
Excess revenues over expenses	130,227	129,450
Fund balance, beginning	1,931,881	1,802,431
Fund balance, ending	$ 2,062,108	$ 1,931,881

MISSOURI STATE MEDICAL FOUNDATION

NOTES TO FINANCIAL STATEMENTS

Note 1. Significant Accounting Policies

Method of accounting:

The accounts are maintained and these statements are presented, on a modified cash basis under which, except for the recognition of the assets and liabilities shown on the statement of assets, liabilities and fund balance on a modified cash basis, only cash receipts and disbursements are recorded and reflected in these statements. Since accrued interest on loans receivable and receivables which may be material in amount, are not reflected, the financial statements are not intended to present the overall financial position and results of operations in conformity with generally accepted accounting principles. However, the individual assets shown are presented in accordance with generally accepted accounting principles.

Loans receivable:

Loans receivable are stated at face amount with an allowance for doubtful accounts computed as 3 percent of the balance of the loans receivable at year end.

Tax status:

The Foundation is a not-for-profit organization exempt from federal income taxes under Internal Revenue Code Section 501(c)(3).

Equipment:

Equipment is carried at cost. Depreciation is computed by the straight-line method based on the estimated useful life of the asset.

Note 2. Loans Receivable

The Foundation grants low interest loans in multiples of $1,000 per year for medical students. The following is a summary of the transactions affecting the loans receivable account for the years ended December 31, 1989 and 1988:

		1989		1988
Loans receivable at January 1		$1,289,424		$1,360,236
Add loans advanced	$193,000		$131,000	
Less:				
Principal repayments	(196,774)		(197,391)	
Loans written off	(2,595)	(6,369)	(4,421)	(70,812)
		1,283,055		1,289,424
Allowance for doubtful accounts at January 1	(38,683)		(40,807)	
Current year provision for doubtful accounts	(2,401)		(2,297)	
Current year loans written off	2,595	(38,789)	4,421	(38,683)
		$1,244,566		$1,250,741

Note 3. Related Party Transactions

The Foundation is assessed by the Missouri State Medical Association an annual fee for administrative cost. For each year ended December 31, 1989 and 1988, the Foundation paid the Association $12,000 and $10,000 for administrative costs. The Foundation also reimburses the Missouri State Medical Association for expenses paid by the Association on behalf of the Foundation. These reimbursements for the years ended December 31, 1989 and 1988 were $883 and $2,654 for professional fees and $1,317 and $1,704 for printing and meeting expenses.

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MSMA
132nd Annual Convention
April 5-8, 1990
Tan-Tar-A Resort, Lake of the Ozarks

Preliminary Program

SCIENTIFIC PROGRAM

(listed alphabetically by sponsoring specialty)

ALLERGY

Saturday, April 7

8:00-12:00 noon Scientific Programs

8:00 "Urticaria"
Speaker: James Thompson, M.D.
Fellow in Allergy and Immunology, Washington University School of Medicine, St. Louis

8:45 "Acute Severe Asthma"
Speaker: Joram Seggev, M.D.
Assistant Professor, Division of Pulmonary, Critical Care and Environmental Medicine, University of Missouri, Columbia

9:15 "Nocturnal Asthma"
Speaker: Phillip Korenblat, M.D.
Clinical Professor of Medicine (Clinical), Washington University School of Medicine and Chief of Allergy Clinic, Jewish Hospital, St. Louis

9:45 "Immunologic Lung Disease"
Speaker: Raymond Slavin, M.D.
Professor of Internal Medicine and Microbiology; Director, Section of Allergy and Immunology, St. Louis University School of Medicine, St. Louis

10:45 "Allergic Rhinitis"
Speaker: Phillip Norman, M.D.
Professor of Medicine, Johns Hopkins University School of Medicine, Baltimore, MD

11:45 Panel Discussion

12:00 noon Lunch and Business Meeting

1:45-3:00 p.m. Scientific Programs

1:45 "Immunotherapy of Allergic Diseases"
Speaker: Phillip Norman, M.D.
Professor of Medicine, Johns Hopkins University School of Medicine, Baltimore, MD

2:30 "Primary Immunodeficiency"
Speaker: Stephen Polmar, M.D.
Professor of Pediatrics, Washington University School of Medicine and Chief of the Division of Allergy and Immunology, Children's Hospital, St. Louis

3:15 Panel Discussion

Sponsored by the Missouri State Allergy Association

ANESTHESIOLOGY

Friday, April 6

6:30 p.m. Missouri Society of Anesthesiologists Reception and Dinner

Saturday, April 7

7:30 a.m. MSA Executive Breakfast

8:00 a.m. MSA Continental Breakfast

8:30-12:00 noon Scientific Program
"Pain Control — Practice in the 90s"

"Cancer Pain Control"
Speaker: Steven G. Charapata, M.D., Department of Anesthesiology, Research Medical Center, Kansas City

"Obstetric Pain Control"
Speaker: Ronald L. Ellis, M.D.
Department of Anesthesiology, Lester E. Cox Medical Center, Springfield

"Spinal Opioids for Post-Operative Analgesia"
Speaker: Susan S. Porter, M.D.
Department of Anesthesiology, St. Lukes Hospital, Kansas City

12:00 noon MSA Lunch/Business Meeting

1:00-4:00 p.m. Scientific Programs

"Acute Pain Service"
Speaker: Carl H. Nielson, M.D.
Department of Anesthesia, Washington University School of Medicine, St. Louis

"Post-Operative Pain Service (PCA)"
Speaker: Ellis R. Taylor, M.D.
Department of Anesthesia, Washington University School of Medicine, St. Louis

"PROGRAM TO BE NAMED"
Speaker: Debra A. Dill-Bergmann, M.D., West County Pain Control Center, St. Louis

Sponsored by the Missouri Society of Anesthesiologists

DERMATOLOGY

Friday, April 6

1:45-5:00 p.m. Scientific Programs

1:45 "Difficult Skin Neoplasms"
Speaker: David Clark, M.D.
Assistant Professor of Dermatology, University of Missouri School of Medicine, Columbia

2:15 "What's New in Sunscreen Technology"
Speaker: Lincoln Krochmal, M.D.
Vice-President, Dermatology, Bristol-Myers-Squibb Company, Westwood Pharmaceuticals, Buffalo, NY

3:05 "Problems with Medical Practice Today"
Speaker: Gary A. Dyer, M.D.
President-Elect, Missouri State Medical Association, St. Joseph

3:35 "Immunoperoxidase Stains — When are They of Help"
Speaker: John DeSpain, M.D.
Assistant Professor of Dermatology, University of Missouri School of Medicine, Columbia

4:05 "Neutrophilic Dermatoses"
Speaker: Ronald Swinford, M.D.
Assistant Professor of Dermatology, University of Missouri School of Medicine, Columbia

4:35 "Cutaneous T-Cell Lymphomas"
Speaker: Susan Zurowski, M.D.
Assistant Professor of Dermatology, University of Missouri School of Medicine, Columbia

Saturday, April 7

8:00 Registration

8:30-11:45 a.m. Scientific Programs

8:30 "Current Management of Mycosis Fungoides"
Speaker: Kenneth W. Blaylock, M.D., Professor and Chairman of Dermatology, Medical College of Virginia, Richmond, VA

9:00 "Armadillo's Revenge — Leprosy in Armadillo Handlers"
Speaker: John E. Wolf, M.D.
Professor and Chairman, Department

of Dermatology, Baylor College of Medicine, Houston, TX

9:30 "Atopic Dermatitis"
Speaker: Kenneth W. Blaylock, M.D., Professor and Chairman of Dermatology, Medical College of Virginia, Richmond, VA

10:15 "New Lamps for Old-Historical Perspective on Dermatological Therapy"
Speaker: John E. Wolf, M.D.
Professor and Chairman, Department of Dermatology, Baylor College of Medicine, Houston, TX

10:45 "Interesting Cutaneous Immunological Problems"
Speaker: Kenneth W. Blaylock, M.D., Professor and Chairman of Dermatology, Medical College of Virginia, Richmond, VA

11:15 "Moth Busters"
Speaker: John E. Wolf, M.D.
Professor and Chairman, Department of Dermatology, Baylor College of Medicine, Houston, TX

11:45 Lunch

1:45-4:55 p.m. Scientific Programs

1:45 "Alpha Hydroxy Acids for a New Age"
Speaker: Eugene VanScott, M.D.
Clinical Professor of Dermatology, Temple University School of Medicine, Philadelphia, PA

2:15 "Clinical Mycology Pearls"
Speaker: Boni Elewski, M.D.
Assistant Professor of Dermatology, Case Western Reserve University, Cleveland, OH

2:45 "Alpha Hydroxy Acids for New Therapy"
Speaker: Eugene VanScott, M.D.
Clinical Professor of Dermatology, Temple University School of Medicine, Philadelphia, PA

3:30 "Epidermal Cytokinesis"
Speaker: Thomas Kupper, M.D.
Associate Professor of Dermatology, Washington University School of Medicine, St. Louis

4:00 "Interrupting Steroid Tachyphylaxis, Enhancing Steroid Efficacy"
Speaker: Eugene VanScott, M.D.
Clinical Professor of Dermatology Temple University School of Medicine, Philadelphia, PA

4:30 "Treatment of Pruritus in the Elderly: The 70th Year Itch"
Speaker: Boni Elewski, M.D.
Assistant Professor of Dermatology, Case Western Reserve University, Cleveland, OH

Sunday, April 8

9:00-11:00 a.m. Scientific Programs

9:00 "Nail Diseases"
Speaker: Thelda Kestenbaum, M.D.
Assistant Professor, Department of Medicine, Division of Dermatology, University of Kansas, Kansas City, KS

9:30 "Fungus Infections of the Nails"
Speaker: Boni Elewski, M.D.
Assistant Professor of Dermatology, Case Western Reserve University, Cleveland, OH

10:00-11:00a.m. Clinical Pathology Conference Presented By University of Missouri Dermatology Presidents
Chairman: Robert Buzzel, M.D.
Chief Resident, Dermatology, University School of Medicine, Columbia

**Sponsored by the
Missouri Dermatological Association**

EMERGENCY PHYSICIANS

Saturday, April 7

9:00-10:30 a.m. Scientific Program
"Heart Attacks vs Panic Attacks"
Speaker: Lawrence M. Lewis, M.D., FACEP, Director Emergency Room/ Trauma Division, St. Louis University School of Medicine, St. Louis

Sponsored by the Missouri Chapter,
American College of Emergency Physicians

FAMILY PHYSICIANS

Friday, April 6

11:00-4:00 p.m.	Scientific Program "Update on AIDS" "The Role of the Primary Care Physician in the Care of the HIV-Infected" Speaker: Gail Povar, M.D. Department of Health Care Services, George Washington University School of Medicine, Washington, D.C. "The Psychosocial Care of the HIV-Infected and the Use of Psychopharmacology with Persons with AIDS" Speaker: Mary Alice O'Dowd, M.D. Department of Psychiatry, Montefiore Medical Center, Bronx, NY "Neurological Syndromes Associated with HIV-Infection" Speaker: George Paulson, M.D. Chairman, Department of Neurology, Ohio State University School of Medicine, Columbus, OH
12:00 noon	Luncheon

Co-Sponsored by the Missouri Academy of Family Practice and Missouri Psychiatric Association

Saturday, April 7

11:00-12:30 p.m.	Scientific Program "Drug Abuse" Speaker: David L. Ohlms, M.D. St. Louis
1:30-3:00 p.m.	Scientific Program "Medical Management of Drug Abstinence Syndromes" Speaker: David White, M.D. Lake Ozark

Sponsored by the Missouri Academy of
Family Practice

INTERNAL MEDICINE

Saturday, April 7

9:00-10:30 a.m.	Socio-Economic Session
12:00-3:00 p.m.	Missouri Society of Internal Medicine Council Meeting

Sponsored by the Missouri Society of
Internal Medicine

NEUROSURGERY

Saturday, April 7

12:00 noon	Luncheon and Business Meeting "What the Practicing Neurosurgeon can Contribute to Neuro-Science" Speaker: Ralph Dacey, M.D. Chief Neurosurgeon, Washington University School of Medicine, St. Louis

Sponsored by the Missouri State
Neurosurgical Society

OBSTETRICS-GYNECOLOGY

Saturday, April 7

8:00-3:00 p.m.	Scientific Programs "Antepartum and Intrapartum Assessment of the Fetus" Speakers: Frank Miller, M.D. Professor and Chairman of Obstetrics and Gynecology, University of Arkansas School of Medicine, Little Rock, AR Jack Huddleston, M.D. Professor and Chairman, Department of Obstetrics and Gynecology, Director of Maternal Fetal Medicine, Emory University, Atlanta, GA Dev Mahlak, M.D. Professor of Obstetrics-Gynecology, University of Missouri, Kansas City

Sponsored by the Missouri Section of the American
College of Obstetricians and Gynecologists

OPHTHALMOLOGY

Saturday, April 7

9:00-4:00 p.m. Scientific Programs

"Ocular Cicatricial Pemphigoid — Clinical Pearls"
Speaker: Joseph Tauber, M.D.
University of Missouri School of Medicine, Kansas City

"High Risk Corneal Transplantation"
Speaker: Joseph Tauber, M.D.
University of Missouri School of Medicine, Kansas City

"Ocular Toxicity of Aluminum"
Speaker: Thomas Fleming, M.D.
Resident, Department of Ophthalmology, Bethesda Eye Institute, St. Louis

"CO_2 Laser in Tarso-conjunctival Grafting and Lower Lid Reconstruction"
Speaker: Todd Auker, M.D.
Resident, Department of Ophthalmology, Bethesda Eye Institute, St. Louis

"Excimer Laser Surgery of the Cornea — UMKC Clinical Trials"
Speaker: Jerry Swale, M.D.
Resident, Department of Ophthalmology, University of Missouri School of Medicine, Kansas City

"Central Serous Choroidopathy: Long Term Follow-up"
Speaker: Rob Henry, M.D.
Resident, Department of Ophthalmology, University of Missouri School of Medicine, Kansas City

"Neuroradiologic Intervention in Arteriovenous Anomalies of the Orbit"
Speaker: Felix Sabates, Jr., M.D., Resident, Department of Ophthalmology, University of Missouri School of Medicine, Kansas City

"Siderosis Secondary to Retained Intraocular Foreign Body"
Speaker: Joan Wu, M.D.
Resident, Department of Ophthalmology, University of Missouri School of Medicine, Kansas City

"Current Concepts in the Diagnoses and Management of HIV Related Eye Disease"
Speaker: Mel Clark, M.D.
Resident, Department of Ophthalmology, University of Missouri School of Medicine, Kansas City

"Facioscapulohumeral Syndrome: Ocular Findings"
Speaker: Uday Desai, M.D.
Resident, Department of Ophthalmology, University of Missouri School of Medicine, Kansas City

"Apraclonidine in the Prevention of Post-operative Pressure Rises After Cataract Surgery"
Speaker: Stephen Wiles, M.D.
Resident, Mason Institute of Ophthalmology, University of Missouri School of Medicine, Columbia

"Intraoperative Cultures During Cataract Surgery"
Speaker: Vance Thompson, M.D.
Resident, Mason Institute or Ophthalmology, University of Missouri School of Medicine, Columbia

"Acanthamoeba Corneal Ulcer"
Speaker: Ernest Skidmore, M.D.
Resident, Mason Institute of Ophthalmology, University of Missouri School of Medicine, Columbia

Sponsored by the Missouri Ophthalmological Society, Inc.

OTOLARYNGOLOGY

Saturday, April 7

7:30 a.m. MSO-HNS Breakfast and Business Meeting

9:00-2:00 p.m. Scientific Program
"Controversies and Current Management of Head and Neck Cancer"

"Present Role of Chemotherapy and Radiation Therapy in Head and Neck Surgery"
Speaker: James Suen, M.D.
University of Arkansas, Little Rock, AR

"Elective Radical Neck Dissection"
Speaker: James Suen, M.D.
University of Arkansas, Little Rock, AR

"Conservation or Modified Neck Dissection"
Speaker: Jesus Medina, M.D.
University of Oklahoma, Oklahoma City, OK

"Controversies and Limits in Conservation Laryngectomy"
Speaker: Donald G. Sessions, M.D., Washington University School of Medicine, St. Louis

"Options for Surgical Approach to Oropharynx"
Speaker: Michael D. Maves, M.D.
St. Louis University School of Medicine, St. Louis

"Controversies in Surgical Management of Thyroid Cancer"
Speaker: Robert P. Zitsch, III, M.D., University of Missouri School of Medicine, Columbia

Sponsored by the Missouri Society of Otolaryngology-Head and Neck Surgery and the American Cancer Society

PATHOLOGY

Saturday, April 7

9:00-11:30 a.m.	Scientific Program "Clinical Application of Flow Cytometry" Speaker: C. William Caldwell, M.D., Ph.D., Cancer Research Center, Columbia
12:00 noon	Luncheon
1:00 p.m.	Business Meeting

Sponsored by the Missouri Society of Pathologists

PHYSICAL MEDICINE AND REHABILITATION

Saturday, April 7

9:00-12:00 noon	Scientific Program "Overview of the New Trends in Physical Medicine" Speaker: Erwin Gonzalez, M.D. President, American Academy of Physical Medicine and Rehabilitation, New York, NY
12:00-1:00 p.m.	Luncheon and Business Meeting

Sponsored by the Central Society of Rehabilitation Medicine

PLASTIC SURGERY

Friday, April 6

2:00-5:00 p.m.	Scientific Programs "What's New in Microvascular Surgery Replantation and Wound Repair" Speaker: William Swartz, M.D. Professor of Surgery, Tulane University School of Medicine, New Orleans, LA "Microsurgical Reconstruction in Patients with Facial Contour Defects" Speaker: Eric Swanson, M.D. Kansas City "Use of Platelet Derived Wound Healing Factors in Non-healing Wounds" Speaker: David Zamierowski, M.D. Kansas City
7:00 p.m.	Reception
8:00 p.m.	Dinner

Saturday, April 7

7:00 a.m.	Board of Directors Breakfast
9:00-12:00 noon	Scientific Program "Show Me Session" "What's New in Cosmetic Surgery" Speaker: Tolbert S. Wilkinson, M.D., Institute of Aesthetic Plastic Surgery, San Antonio, TX

"Body Sculpturing of Trunk and Thighs"
Speaker: Ted Lockwood, M.D.
Kansas City

"Removal of Telangiectasis and Capillary Hemangiomas with Tunable Dye Laser"
Speaker: Don Fortin, M.D.
Kansas City

12:00-1:00 p.m. Business Meeting

Sponsored by Missouri Association of Plastic and Reconstructive Surgery

PSYCHIATRY

Friday, April 6

11:00-4:00 p.m. Scientific Program
"Update on AIDS"

"The Role of the Primary Care Physician in the Care of the HIV-Infected"
Speaker: Gail Povar, M.D.
Department of Health Care Services, George Washington University School of Medicine, Washington, D.C.

"The Psychosocial Care of the HIV-Infected and the Use of Psychopharmacology with Persons with AIDS"
Speaker: Mary Alice O'Dowd, M.D.
Department of Psychiatry, Montefiore Medical Center, Bronx, NY

"Neurological Syndromes Associated with HIV-Infection"
Speaker: George Paulson, M.D.
Chairman, Department of Neurology, Ohio State University School of Medicine, Columbus, OH

12:00 noon Luncheon

Co-Sponsored by the Missouri Psychiatric Association and Missouri Academy of Family Physicians

6:30-8:30 p.m. Missouri Psychiatric Association Reception and Dinner
Speaker: John Blamphin
Director of Public Affairs, American Psychiatric Association

Saturday, April 7

11:00-12:30 p.m. Scientific Program
"New Modalities in Treatment of Depression"
Speaker: Jonathan Davidson, M.D.
Professor of Psychiatry, Duke University, Durham, NC

Funded by Burroughs-Wellcome

Sponsored by the Missouri Psychiatric Association

RADIOLOGY

Saturday, April 7

9:00 a.m. MRS Nominating Committee Meeting

10:00 a.m. Board of Directors Meeting

12:00 noon Board of Directors Luncheon

1:30-4:30 p.m. Scientific Program
"Standards in Radiological Practice - American College of Radiology"

4:30 p.m. Annual Membership Meeting and Election of Officers

5:30 p.m. Reception

Sponsored by the Missouri Radiological Society

SURGERY

Thursday, April 5

6:30 p.m. MSSS Board of Directors Cocktails and Dinner

Friday, April 6

11:00-12:30 p.m. Scientific Program
"Nonoperative Management of Gallstone Disease"

Speakers:
Bruce V. MacFadyen, Jr., M.D.
Assistant Professor of Surgery, University of Texas Health Sciences Cen-

ter, Houston, TX

Robert Churchill, M.D.
Professor and Chairman of Radiology, University of Missouri School of Medicine, Columbia

James H. Butt, M.D.
Assistant Professor of Medicine, University of Missouri School of Medicine, Columbia

2:00-3:30 p.m. Scientific Program
"Surgical Endocrinology for the 1990s"

Speakers:
L. Michael Brunt, M.D.
Assistant Professor of Surgery, Washington University School of Medicine, St. Louis

Ronald J. Sharp, M.D.
Assistant Clinical Professor of Surgery, University of Missouri School of Medicine, Kansas City

Debra G. Koivunen, M.D.
Assistant Professor of Surgery, University of Missouri School of Medicine, Columbia

Saturday, April 7

9:00-10:30 a.m. Scientific Program
"TOPIC TO BE NAMED"
Speaker:
Lester R. Bryant, M.D.
Dean of the University of Missouri School of Medicine and Director of Clinical Services, Hospital and Clinics, Columbia

Sponsored by the Missouri State Surgical Society

THORACIC

Friday, April 6

11:00-12:30 p.m. Annual Charles A. Brasher, M.D. Medical Lectureship
"Asthma Management in the 1990s"
Speaker: Phillip E. Korenblat, M.D., St. Louis

Sponsored by the Missouri Thoracic Society and the American Lung Associations of Eastern and Western Missouri

UROLOGY

Friday, April 6

1:00-2:30 p.m. Scientific Program
"Fetal Diagnosis and Treatment of Urologic Abnormalities"

Speakers:
George Steinhart, M.D.
Director of Pediatric Urology, Cardinal Glennon Children's Hospital, St. Louis

Steve Weinstein, M.D.
Associate Professor of Urology, University of Missouri School of Medicine, Columbia

Sponsored by the Missouri Urological Society

AFFILIATED ANNUAL PROGRAM EVENTS

(listed alphabetically by sponsoring organization)

CANCER

Saturday, April 7

9:00-2:00 p.m. Scientific Program
"Controversies and Current Management of Head and Neck Cancer"

"Present Role of Chemotherapy and Radiation Therapy in Head and Neck Surgery"
Speaker: James Suen, M.D.
University of Arkansas, Little Rock, AR

"Elective Radical Neck Dissection"
Speaker: James Suen, M.D.
University of Arkansas, Little Rock, AR

"Conservation or Modified Neck Dissection"

Speaker: Jesus Medina, M.D.
University of Oklahoma

"Controversies and Limits in Conservation Laryngectomy"
Speaker: Donald G. Sessions, M.D., Washington University School of Medicine, St. Louis

"Options for Surgical Approach to Oropharynx"
Speaker: Michael D. Maves, M.D.
St. Louis University School of Medicine, St. Louis

"Controversies in Surgical Management of Thyroid Cancer"
Speaker: Robert P. Zitsch, III, M.D., University of Missouri School of Medicine, Columbia

Sponsored by the Missouri Society of Otolaryngology Head and Neck Surgery and the American Cancer Society

INTERNATIONAL PHYSICIANS

Sunday, April 8

11:30 p.m.	Luncheon and Business Meeting

Sponsored by the American College of International Physicians

HOUSE OF DELEGATES

Thursday, April 5

10:00 a.m.	**Opening Session** Presiding, Jo-Ellyn M. Ryall, M.D. St. Louis, Speaker Reports of Officers Reports of Committees and Commissions President's Message
1:30 p.m.	Reference Committee Meetings

Friday, April 6

4:00 p.m.	**Second Session** Report of the Nominating Committee Reports of Reference Committees Report of the Council

Sunday, April 8

7:30 a.m.	**Final Session**, Breakfast Meeting Election of Officers Report of Election of Councilors Reports of Reference Committees Installation of Officers Appointment of Committee & Commission Members

Registration of Delegates opens at 8:00 a.m. in the Windgate Foyer on Thursday, Friday and Saturday.

SPECIAL EVENTS

Thursday, April 5

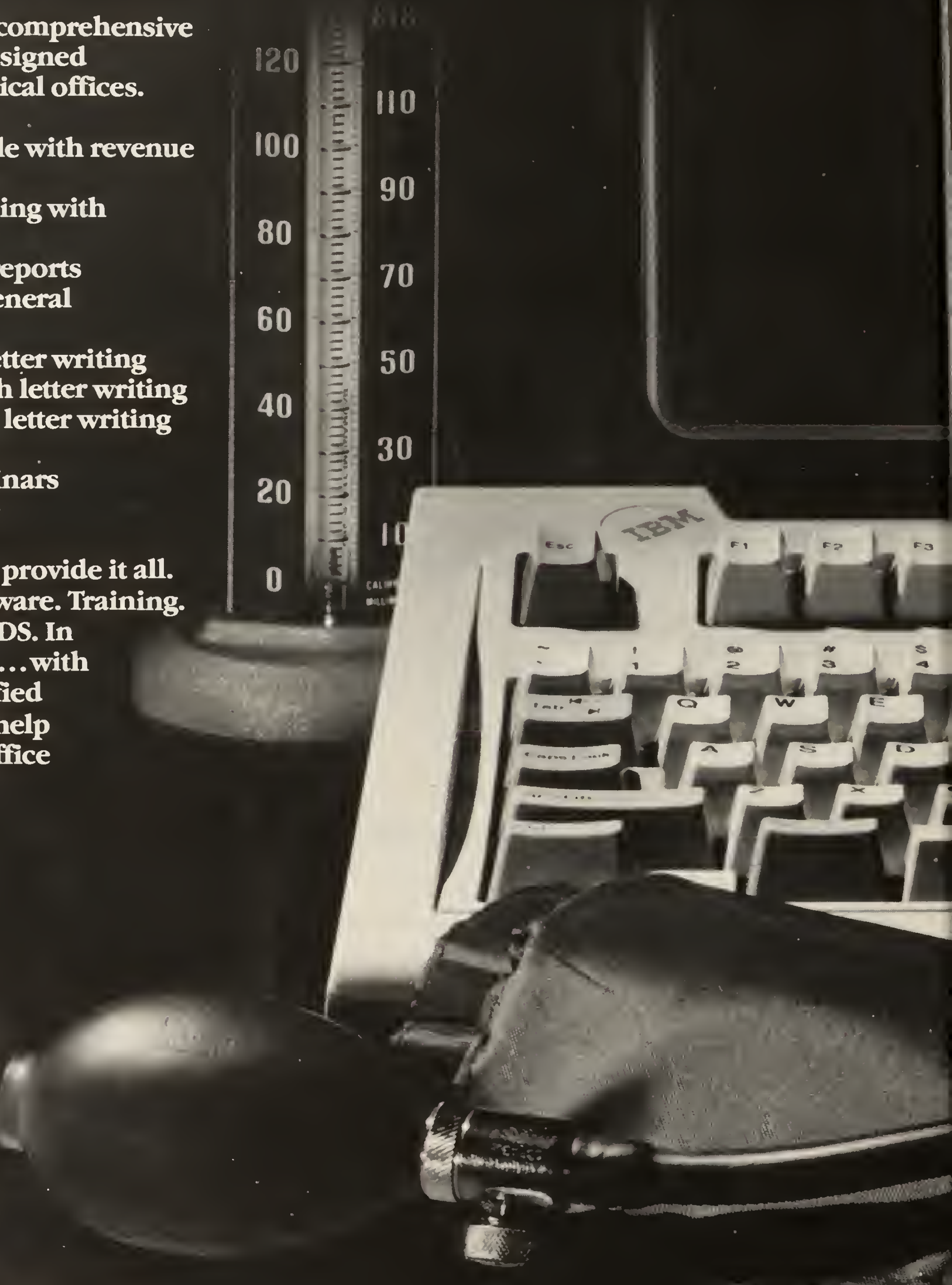
7:00 p.m.	MSMA Auxiliary Fundraiser for Missouri State Medical Association and AMA-ERF — "Show-Me Social"

Friday, April 6

9:00 a.m.	General Session Guest Speaker: Richard Lamm, former governor of Colorado

Saturday, April 7

7:15 a.m.	MSMA Auxiliary Public Affairs Breakfast Guest Speaker: Lt. Gov. Mel Carnahan
9:30 a.m.	Discuss the Issues with Your AMA Delegates
6:00 p.m.	Presidential Inauguration Gary A. Dyer, M.D.
7:00 p.m.	MSMA Reception



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Continuing Medical Education

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March

2 **Concepts of Supportive Cancer Care** — Location: St. Luke's Hospital Institute for Health Education, St. Louis, MO. Contact: Laura Klaus, Director of Professional Education, American Cancer Society, 1280 Research Blvd., St. Louis, MO 63132. 314/567-9730 or 1-800-727-0395.

2 **Preceptors Day** — Location: School of Medicine, Columbia, MO. Contact: Barry Kling, MU School of Medicine, Office of Continuing Education, MA215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

2 - 4 **Organizational Systems** — Location: University of Missouri, Columbia, MO. Contact: Barry Kling, MU School of Medicine, Office of Continuing Education, MA215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

3 - 4 **Family Practice Update** — Location: School of Medicine, Columbia, MO. Contact: Barry Kling, MU School of Medicine, Office of Continuing Education, MA215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

5 - May 21 **16th Annual Internal Medicine Review** — Location: The Jewish Hospital, Washington University Medical Center, St. Louis, MO. Contact: Cathy Caruso, Continuing Medical Education, Washington University School of Medicine, Box 8063, 660 South Euclid, St. Louis, MO 63110. 314/362-6893.

6 - 7 **Transesophageal Echocardiography Course** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: Kathleen Habermehl, Continuing Medical Education, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8897.

8 **Tobacco Conference 1990: A Forum for Professionals** — Location: Capitol Plaza Hotel, Jefferson City, MO. Contact: Monica H. Eischen, Missouri Department of Health, Division of Chronic Disease Prevention and Health Promotion, 201 Business Loop 70 West, Columbia, MO 65203. 314/875-2218.

8 - 9 **Advanced Trauma Life Support (ATLS) Provider Course** — Location: Texas A&M University, Temple, TX. Contact: Charlene E. Lee, Office of Continuing Medical Education, Scott and White, 2401 South 31st Street, Temple, TX 76508. 314/774-3197.

12 - 13 **Critical Care Update** — Location: Holiday Inn Executive Center, Columbia, MO. Contact: Barry Kling, Office of Continuing Education, MA215 Health Sciences Center, MU School of Medicine, Columbia, MO 65212. 314/882-4105.

13 - 16 **Strengthening Instructional Skills** — Location: St. Louis University School of Nursing Building, St. Louis, MO. Contact: Annette AufderlHeide, Continuing Medical Education, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8505.

14 **Update in Cardiology** — Location: von Gontard Conference Center, St. John's Mercy Medical Center, St. Louis, MO. Contact: Cathy Lawton, St. John's Mercy Medical Center, 615 South New Ballas Road, St. Louis, MO 63141. 314/569-6930

14 **4th Annual Management of Common Gastroenterological Problems** — Location: University of Kansas Medical Center, Kansas City, Kansas. Contact: Bernice Jackson, University of Kansas Medical Center, Office of Continuing Education, Rainbow and Olathe Blvds., Kansas City, KS 66103. 913/588-4490.

16 **Clinical Conference in Otolaryngology: Update in Neurotology** — Location: St. Louis University Learning Resources Center, St. Louis University Medical Center, 1402 S. Grand Blvd., St. Louis, MO 63104-1083. 314/577-8167.

16 **Eighth Annual Symposium on Geriatric Medicine** — Location: Breckenridge Inn Frontenac, St. Louis, MO. Contact: Anita Herbst, St. Louis University School of Medicine, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8167.

21 **Cancer of Unknown Primary Site** — Location: Jewish Hospital, St. Louis, MO. Contact: Alan P. Lyss, M.D., Jewish Hospital, 216 S. Kingshighway, P.O. Box 14109, St. Louis, MO 63178. 314/454-7000.

23 What's New in Diabetes? — Location: The Ritz-Carlton, Kansas City, MO. Contact: The Ed Bixby Institute for Postgraduate Medical Education, Research Medical Center, 2316 East Meyer Blvd., Kansas City, MO 64132. 816/276-4306.

23 - 24 **Advanced Trauma Life Support Provider Course** — Location: St. Louis University Learning Resources Center, St. Louis, MO. Contact: Mary Keegan, St. Louis University School of Medicine, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8365.

27 - 29 **Pediatric Advanced Cardiac & Trauma Support For Life and Pediatric Advanced Life Support (PACTS/PALS)** — Location: Cardinal Glennon Children's Hospital, St. Louis, MO. Contact: Elaine Thompson, Continuing Medical Education, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-5657.

29 - 30 **Annual Pediatric Postgraduate Symposium** — Location: Westin Crown Center Hotel, Kansas City, MO. Contact: Bernice Jackson, University of Kansas Medical Center, Office of Continuing Education, Rainbow and Olathe Blvds., Kansas City, KS. 913/588-4490.

30 - April 1 **Geriatric Depression** — Location: Tan-Tar-A Resort, Lake of the Ozarks, MO. Contact: SLU Geriatric Psychiatry, Continuing Medical Education, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8726.

April

3 - 5 **Transesophageal Echocardiography Course** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: Kathleen Habermehl, St. Louis University School of Medicine, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8897.

5 - 6 **17th Annual Symposium on Obstetrics & Gynecology** — Location: Washington University Medical Center, St. Louis, MO. Contact: Cathy Caruso, Continuing Medical Education, Washington University School of Medicine, Box 8063, 660 South Euclid, St. Louis, MO 63110. 314/362-6893.

5 - 6 **Current Management in Critical Care** — Location: Ritz Carlton Hotel, Kansas City, MO. Contact: Linda F. Smutz, Kansas City Southwest Clinical Society, 7920 Ward Parkway, Suite 205, Kansas City, MO 64114. 816/523-3383.

5 - 7 **Advances in Ophthalmology** — Location: Embassy Suites Hotel, Country Club Plaza, Kansas City, MO. Contact: Bernice Jackson, University of Kansas Medical Center, Office of Continuing Education, Rainbow and Olathe Blvds., Kansas City, KS 66103. 913/588-4490.

6 - 8 **Microsurgery of the Lumbar and Cervical Spine** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: Anita Herbst, St. Louis University School of Medicine, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8167.

18 **New Imaging Modalities in Cancer Diagnosis** — Location: Jewish Hospital, St. Louis, MO. Contact: Alan P. Lyss, M.D., Jewish Hospital, 216 E. Kingshighway, P.O. Box 14109, St. Louis, MO 63178. 314/454-7000.

18 - 19 **15th Annual Family Practice Symposium** — Location: Ritz-Carlton Hotel, Kansas City, MO. Contact: Bernice Jackson, University of Kansas Medical Center, Office of Continuing Education, Rainbow and Olathe Blvds., Kansas City, KS 66103. 913/588-4490.

18 - 22 **Sixth Annual Family Medicine Review** — Location: Stouffer Hotel, Austin, TX. Contact: Charlene E. Lee, Department of Continuing Medical Education, Scott and White, 2401 South 31st Street, Temple, TX 76508. 817/774-4073.

19 - 20 **The 21st Annual Matt Weis Symposium in OB/GYN** — Location: Breckenridge Frontenac Hotel, St. Louis, MO. Contact: Sandra Williams, St. John's Mercy Medical Center, 615 South New Ballas Road, St. Louis, MO 63141. 314/569-6880.

21 **New Directions in Cardiology: Update in Invasive & Non-Invasive Therapies** — Location: Hyatt Regency Hotel at Union Station, St. Louis, MO. Contact: Anita Herbst, St. Louis University School of Medicine, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8167.

23 - 24 **Advanced Cardiac Life Support (ACLS) Provider Course** — Location: Texas A&M University, Temple, TX. Contact: Charlene E. Lee, Office of Continuing Medical Education, Scott and White, 2401 S. 31st Street, Temple, TX 76508. 817/774-3197.

23 - 27 **Medicolegal Death Investigator Training Course** — Location: St. Louis University Learning Resources Center, St. Louis, MO. Contact: Mary Fran Ernst, St. Louis University School of Medicine, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/725-1884.

23 - May 4 **31st Annual Postgraduate Institute for Pathologists in Clinical Cytopathology — In-Residency Course B** — Location: Johns Hopkins Medical Institutions, Baltimore, MD. Contact: John K. Frost, M.D., or Ms. Betty Ann Remley, 111 Pathology Bldg., The Johns Hopkins Hospital, Baltimore, MD 21205. 301/955-8594.

27 - 28 **Life-Style Symposium: Prescribing for and Obtaining Compliance from Your High Cardiovascular Risk Patients with Dyslipidemia** — Location: Westin Crown Center Hotel, Kansas City, MO. Contact: Bernice Jackson, University of Kansas Medical Center, Office of Continuing Education, Rainbow and Olathe Blvds., Kansas City, KS 66103. 913/588-4490.

27 - 29 **40th Annual Postgraduate Symposium on Anesthesiology** — Location: Ritz-Carlton Hotel, Kansas City, MO. Contact: Bernice Jackson, University of Kansas Medical Center, Office of Continuing Education, Rainbow and Olathe Blvds., Kansas City, KS 66103. 913/588-4490.

28 **Lyme Disease In The Midwest** — Location: St. Louis University Frost Campus, Kelly Auditorium, St. Louis, MO. Contact: Dorothy Feir, Ph.D., Continuing Medical Education, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/658-3907.

May

2 - 5 **16th Annual Meeting Federated Ambulatory Surgery Association — Ambulatory Surgery '90: Focus on Excellence** — Location: Anaheim Marriott, Anaheim, CA. Contact: Gerald G. Pousho, M.D., FASA, 700 N. Fairfax St., #520, Alexandria, VA 22314. 703/836-8808.

3 - 5 **Cardiovascular Medicine Legal Environment: Medicine's Response** — Location: Don CeSar Beach Resort, St. Petersburg, Florida. Contact: Anita Herbst, St. Louis University School of Medicine, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8167.

3 - 5 **Pediatric Advanced Cardiac & Trauma Support for Life and Pediatric Advanced Life Support (PACTS/PALS)** — Location: Cardinal Glennon Children's Hospital, St. Louis, MO. Contact: Elaine Thompson, Continuing Medical Education, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-5657.

8 - 10 **Introduction to Doppler Echocardiography** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: Kathleen Habermehl, St. Louis University School of Medicine, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8897.

11 **Toxicology Update 1990** — Location: Hyatt Regency St. Louis Union Station, St. Louis, MO. Contact: Bob Jaeger, Continuing Medical Education, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/772-8300.

11 **Third Annual Trauma Symposium: Care of the Multiple Trauma Patient** — Location: Holiday Inn, Clayton, MO. Contact: SLUMC Staff Development, Continuing Medical Education, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8095.

11 - 12 **Low Back & Sciatic Pain: Evaluation & Treatment** — Location: Washington University Medical Center, St. Louis, MO. Contact: Cathy Caruso, Continuing Medical Education, Washington University School of Medicine, Box 8063, 660 S. Euclid, St. Louis, MO 63110. 314/362-6893.

11 - 13 **Allergy For the Clinician: Practical Solutions To Everyday Problems** — Location: Ritz-Carlton Hotel, Clayton, MO. Contact: Anita Herbst, Continuing Medical Education, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8167.

16 **Hematopoietins, Biologics, and Marrow Transplantation in the Treatment of Common Solid Tumors** — Location: Jewish Hospital, St. Louis, MO. Contact: Alan P. Lyss, M.D., Jewish Hospital, 216 S. Kingshighway, P.O. Box 14109, St. Louis, MO 63178. 314/454-7000.

18 **Kansas Medicine: Ten Years Later** — Location: Hyatt Regency Hotel, Kansas City, MO. Contact: Bernice Jackson, University of Kansas Medical Center, Office of Continuing Education, Rainbow and Olathe Blvds., Kansas City, KS 66103. 913/588-4490.

19 **Cholesterol: Practical Aspects of Patient Management** — Location: Adam's Mark Hotel, St. Louis, MO. Contact: Anita Herbst, Continuing Medical Education, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8167.

27 - 31 **19th Annual Scientific Assembly - American College of Emergency Physicians State Chapter of California** — Location: Silverado Country Club, Napa, CA. Contact: CAL/ACEP office, 505 N. Sepulveda Blvd., Suite 12, Manhattan Beach, CA 90266. 213/374-4039 or 1-800-SEK-ACEP.

31 - June 1 **Patent Development** — Location: Stouffer Hotel, St. Louis, MO. Contact: Barry Kling, MU School of Medicine, Office of Continuing Education, MA215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

June

1 **Perinatal Sonography: Clinical Applications For 1990** — Location: St. Mary's Health Center, St. Louis, MO. Contact: Sandy Cobb, Continuing Medical Education, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/768-8730.

1 - 2 **3rd Annual Contact Lens Course** — Location: Washington University Medical Center, St. Louis, MO. Contact: Cathy Caruso, Continuing Medical Education, Washington University School of Medicine, Box 8063, 660 S. Euclid, St. Louis, MO 63110. 314/362-6893.

1 - 3 **The Big Four: Obesity, Diabetes Mellitus, Hypertension, Hyperlipidemia** — Location: Holiday Inn Executive Center, Columbia, MO. Contact: Barry Kling, MU School of Medicine, Office of Continuing Education, MA215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

5 - 7 **Introduction to Doppler Echocardiography** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: Kathleen Habermehl, Continuing Medical Education, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8897.

6 - 9 **Facial Rejuvenation** — Location: Ritz-Carlton St. Louis Hotel, St. Louis, MO. Contact: Cathy Caruso, Office of Continuing Medical Education, Washington University School of Medicine, 660 S. Euclid, Box 8063, St. Louis, MO 63110. 1-800-325-9862 or 314/362-6893.

6 - 10 **7th Annual Meeting of the Southern Orthopaedic Association** — Location: Hyatt Regency Hotel, Maui, Hawaii. Contact: Jeanette Stone, Southern Orthopaedic Association, 35 Lakeshore Drive, P.O. Box 190088, Birmingham, AL 35219-0088. 205/945-1848.

7 - 9 **Spine - Microsurgery and Stabilization** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: Anita Herbst, Continuing Medical Education, 1402 S. Grand Blvd., St. Louis, MO 63104. 341/577-8167.

7 - 9 **Frontiers in Endosurgery: Flexible Endoscopy, Laser Surgery, and Endourological Techniques** — Location: Washington University Medical Center, St. Louis, MO. Contact: Cathy Caruso, Continuing Medical Education, Washington University School of Medicine, Box 8063, 660 S. Euclid, St. Louis, MO 63110. 314/362-6893.

8 - 9 **Primary Pediatrics** — Location: Holiday Inn Executive Center, Columbia, MO. Contact: Barry Kling, MU School of Medicine, Office of Continuing Education, MA215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

11 - 16 **Microsurgery of the Brain** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: Anita Herbst, Continuing Medical Education, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8167.

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13 - 17 **Issues In Care: Pain** — Location: South Padre Hilton Resort, South Padre Island, TX. Contact: Charlene E. Lee, Office of Continuing Medical Education, Scott and White, 2401 S. 31st Street, Temple, TX 76508. 817/774-4073.

20 **Ovarian Cancer** — Location: Jewish Hospital, St. Louis, MO. Contact: Alan P. Lyss, M.D., Jewish Hospital, 216 S. Kingshighway, P.O. Box 14109, St. Louis, MO 63178. 314/454-7000.

21 - 22 **Pediatric Advanced Life Support (PALS) Provider Course** — Location: Texas A&M University, Temple, TX. Contact: Charlene E. Lee, Office of Continuing Medical Education, Scott and White, 2401 S. 31st Street, Temple, TX 76508. 817/774-3197.

28 - 30 **Highlights In Women's Health Care** — Location: Santa Fe, NM. Contact: Charlene E. Lee, Office of Continuing Medical Education, Scott and White, 2401 South 31st Street, Temple, TX 76508. 817/774-4073.

July

10 - 12 **Transesophageal Echocardiography Course** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: Kathleen Habermehl, Continuing Medical Education, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8897.

12 - 13 **Advanced Trauma Life Support (ATLS) Provider Course** — Location: Texas A&M University, Temple, TX. Contact: Charlene E. Lee, Office of Continuing Medical Education, Scott and White, 2401 South 31st Street, Temple, TX 76508. 817/774-3197.

16 - 17 **Advanced Cardiac Life Support (ACLS) Provider Course** — Location: Texas A&M University, Temple, TX. Contact: Charlene E. Lee, Office of Continuing Medical Education, Scott and White, 2401 South 31st Street, Temple, TX 76508. 817/774-3197.

August

5 - 10 **Ninth Annual Internal Medicine Review For The Primary Care Physician** — Location: South Padre Hilton Resort, South Padre Island, TX. Contact: Charlene E. Lee, Office of Continuing Medical Education, Scott and White, 2401 South 31st Street, Temple, TX 76508. 817/774-2350.

September

11 - 13 **Introduction To Doppler Echocardiography** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: Kathleen Habermehl, Continuing Medical Education, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8897.

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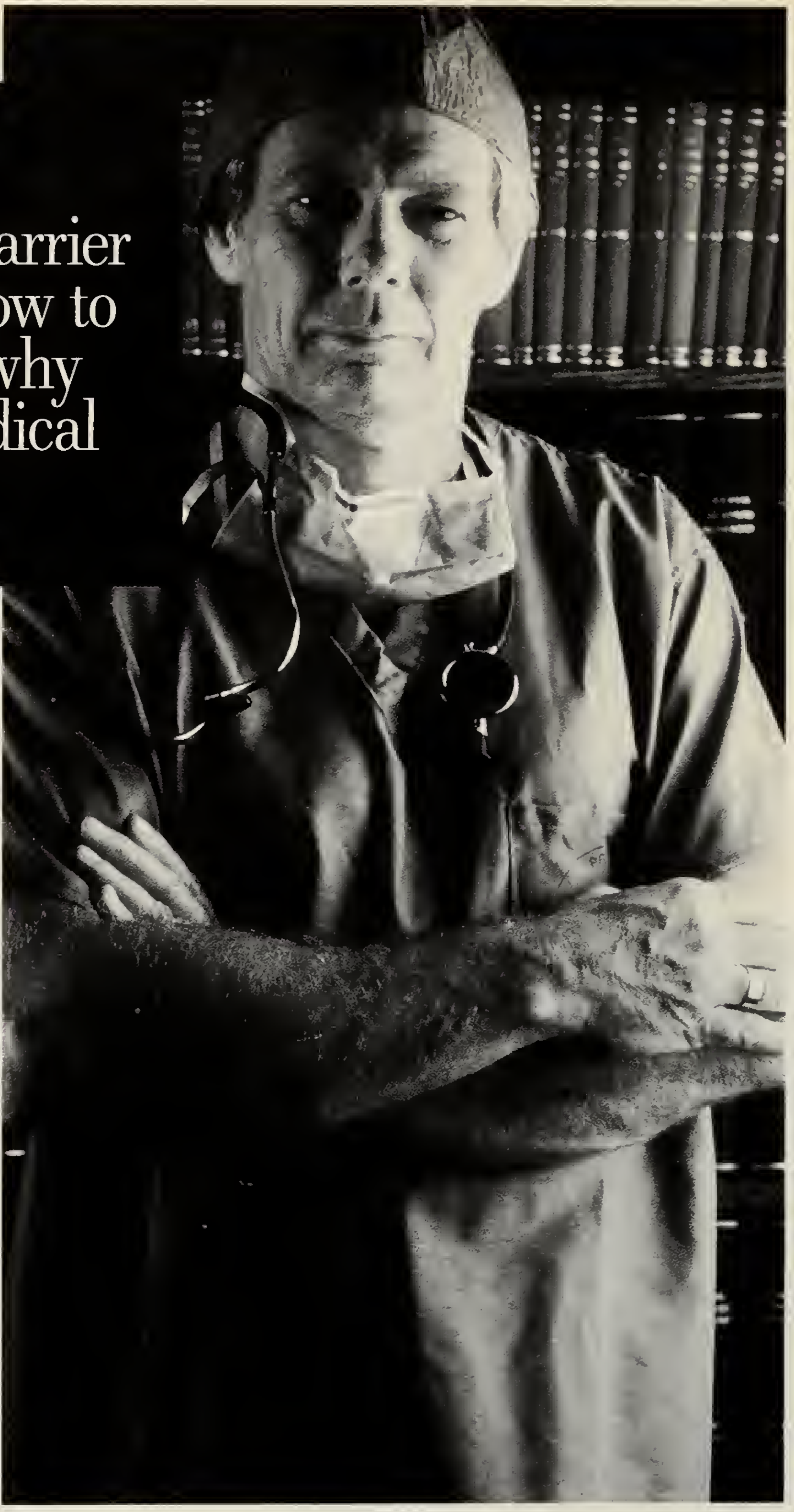

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Medical School News

St. Louis University

■ **Terry V. Zenser, Ph.D.**, professor of internal medicine and biochemistry, St. Louis University School of Medicine, has been awarded a two-year $200,000 grant from the American Cancer Society.

The grant will support research dealing with cancer producing agents that lead to bladder cancer. Specifically, Dr. Zenser will study distinct chemicals that are occupational and environmental hazards. The thrust of his research will be to assess how these compounds become activated to initiate the carcinogenic process.

The research is being conducted at the St. Louis Veterans Affairs Medical Center, where Dr. Zenser is coordinator of the Geriatric Research, Education and Clinical Center (GRECC). Those working with Dr. Zenser are **Bernard B. Davis., M.D.**, professor of internal medicine and **Michael Mattammal, Ph.D.**, associate research professor of internal medicine, St. Louis University School of Medicine.

■ **Arthur J. Labovitz, M.D.**, associate professor of internal medicine and director of the echocardiography and non-invasive hemodynamics in the division of cardiology, St. Louis University School of Medicine, has received a two-year, $58,900 grant from G.H. Besselaar Associates. The grant will allow Dr. Labovitz to study and evaluate a new drug to treat patients with congestive heart failure.

■ **S. Noreen D'Souza, M.D.**, assistant professor of pediatrics and director of the division of genetics, St. Louis University School of Medicine, has received a renewal grant totalling $57,300 from the state of Missouri to continue an evaluation program for genetic disorders.

The grant funds "Tertiary Genetic Center Program Services," allowing genetic specialists to travel to outreach clinics in rural areas throughout the state to provide consultative and diagnostic services for children with genetic disorders or birth defects. Common examples of genetic disorders are cystic fibrosis, neurofibromatosis, sickle cell disease, phenylketonuria (PKU) and cleft lip and palate. The program has been supported with federal and state funds since 1983.

Statistics indicate up to 10% of Missouri's children are diagnosed with genetic disorders or birth defects by the time they reach school age. Early diagnosis enables a child to be treated more effectively so that the severity of the problem is minimized. Dr. D'Souza sees more than 300 patients each year.

■ "The Impaired Health Professional: Drug Use Among Medical Students and Residents," was the issue addressed at the *Tenth Annual Michael F. Conley, M.D., Memorial Lecture*, held at St. Louis University Medical Center on March 2.

The speaker was **DeWitt C. Baldwin, Jr., M.D.**, director of the division of medical education research and information for the American Medical Association.

The American Medical Association and the University of South Florida's Center for Studies of Impaired Professionals are currently conducting the first large scale survey of physician use of alcohol, tobacco, and other drugs. A sample of 10,000 physicians has been selected from the AMA's Physician Masterfile to represent all ages, specialties, and various regions of the country.

The *Michael F. Conley, M.D., Lectureship* is sponsored by the department of community medicine and presented at Internal Medicine Grand Rounds. It raises awareness of the drug dependency which can evolve in the medical environment. The lecture was initiated in 1981 by the friends and relatives of the late Dr. Conley, a 1975 graduate of St. Louis University School of Medicine.

■ The *Seventh Annual J. Gerard Mudd., M.D., Lecture* was presented on Jan. 26 at St. Louis University School of Medicine. Keynote speaker was **Anthony N. DeMaria, M.D.**, professor of medicine and chief of cardiology at the University of Kentucky College of Medicine in Lexington.

Dr. DeMaria discussed "The Influence of Cost Containment Measures Upon Medical Practice: Lessons From Cardiology." He serves on 11 editorial boards, including the *American Journal of Cardiology* and is the immediate past president of the American College of Cardiology. Dr. DeMaria also serves as an editorial consultant for more than nine publications, including *The New England Journal of Medicine.* He has also published more than 300 articles.

The *J. Gerard Mudd Lecture* is a traditional academic program commemorating Dr. Mudd's contribution in establishing the first cardiac catheterization facility west of the Mississippi River in 1951 at St. Louis University Medical Center. Dr. Mudd, professor of internal medicine, served as director of the catheterization lab until his retirement in January 1988. He currently serves as professor emeritus in the department of internal medicine's division of cardiology.

■ A new Catholic medical ethics network has originated in the St. Louis area, with the Center for Health Care Ethics, St. Louis University Medical Center, serving as its headquarters.

Currently, 23 Catholic acute and long-term health care institutions comprise the Gateway Catholic Ethics Network. It serves as a means to share resources in the field of ethics, to promote education, to provide mutual support in especially difficult situations and to jointly take a proactive stand on ethical matters should the need arise.

In 1988, members of various Catholic health care facilities throughout the St. Louis metropolitan area joined forces at the invitation of the **Rev. Kevin O'Rourke, O.P.**, director, Center for Health Care Ethics, St. Louis University Medical Center, and the

Rev. Philip J. Boyle, O.P., former assistant director of the Center.

Meetings are held four times each year, and a quarterly Network newsletter is published. The Network is incorporated in the state of Missouri, and has received the approval of Archbishop John May as a recognized Catholic organization.

Washington University

■ The American College of Physicians has selected **Michael M. Karl, M.D.**, of Washington University School of Medicine in St. Louis, to receive its *Ralph O. Claypoole, Sr., Memorial Award.*

Karl, director of clinical affairs in the Department of Medicine, will receive the award April 26 in Chicago, Illinois at the annual meeting of the American College of Physicians. The *Claypoole Award* is given to an outstanding practitioner of internal medicine who has devoted his career to the care of patients. Criteria for the award include excellence in clinical skills and contributions to medical education and practice.

Karl was named an assistant in the Department of Medicine at Washington University in 1940. He joined the medical school's clinical faculty as an assistant professor in 1950 and was named professor of clinical medicine in 1972 before becoming director of clinical affairs in the Department of Medicine in 1987.

■ Washington University and Monsanto Company have extended their eight-year research agreement for an additional four years. This extension brings total funding commitments to nearly $100 million. The joint announcement came from **Chancellor William H. Danforth** and **Richard J. Mahoney**, Monsanto's chairman and chief executive officer.

The Washington University/Monsanto Biomedical Research Agreement is the largest research collaboration between an American company and an American university. The agreement provides a framework for university and corporate researchers to collaborate in extensive investigations of proteins, peptides and other molecules that modulate cellular functions.

First signed in June 1982, the collaboration began with a $23.5 million commitment for five years. In 1986, after a favorable review by an independent panel of respected scientists, the agreement was extended through 1990 and was increased to approximately $62 million. This new extension calls for more than $9 million per year for each of the years 1991 through 1994.

The agreement was originated by **David M. Kipnis, M.D.**, *Adolphus Busch Professor* and head of the department of internal medicine at Washington University, and **Howard A. Schneiderman, Ph.D.**, Monsanto's senior vice president for research and development and chief scientist.

■ Washington University School of Medicine has been designated a Specialized Center of Research (SCOR) in Coronary and Vascular Diseases and awarded a SCOR grant of $18.6 million from the National Heart, Lung and Blood Institute.

The five-year grant will support research designed to improve prevention, detection, diagnosis, and treatment of heart and vascular diseases. The SCOR is directed by **Burton E. Sobel, M.D.**, *Tobias and Hortense Lewin Professor of Cardiovascular Diseases* and director of the cardiovascular division at the School of Medicine.

The SCOR grant enables 49 investigators from the School of Medicine and Hilltop campuses to conduct multidisciplinary projects encompassing both laboratory and clinical research. Investigators on coronary thrombolysis projects include: **Sobel**; **Paul R. Eisenberg, M.D.**, assistant professor of medicine; **Dana R. Abendschein, Ph.D.**, research assistant professor of medicine; **Allan S. Jaffe, M.D.**, associate professor of medicine; and **Alan L. Schwartz, M.D., Ph.D.**, head of the division of pediatric hematology-oncology and professor of pediatrics and pharmacology. **Peter B. Corr, Ph.D.**, associate professor of medicine in pharmacology, is lead investigator for a laboratory arrythmia project. Investigators working on cardiac PET projects include: **Edward M. Geltman, M.D.**, associate professor of medicine and assistant professor of radiology; **Steven R. Bergmann, M.D., Ph.D.**, assistant professor of physiology in medicine, **Michael J. Welch, Ph.D.**, professor of radiation chemistry in radiology; and **Michel M. Ter-Pogossian, Ph.D.**, professor and director of radiation sciences.

■ The Coleman/Fannie May Candies Foundation of Chicago has donated $2,500 to the Department of Molecular Microbiology at Washington University School of Medicine.

The gift was used to support a departmental conference at which faculty, postdoctoral fellows and students met to present their latest research. According to **Staffan Normark, M.D., Ph.D.**, chairman and professor of the Department of Molecular Microbiology, this kind of conference provides the best possible forum for faculty and students to exchange scientific information and to form new collaborative research programs.

There were 95 participants at this year's conference, which included 36 posters describing departmental research activities. Two sessions of talks reviewed recent discoveries in bacterial pathogenesis, viral vectors and molecular virology. Special guest lecturer **Emil Unanue, M.D.**, *Edward Mallinckrodt Professor of Pathology*, presented an hour-long seminar on antigen processing and presentation in the immune response.

■ **Lee Fetter**, assistant vice chancellor for medical affairs at Washington University School of Medicine, has been named associate vice chancellor and associate dean for administration and finance.

The appointment took effect January 1 and was announced by **William H. Danforth**, chancellor of Washington University. This is the first appointment to be made in an administrative reorganization at the School of Medicine.

Fetter, assistant dean and chief financial and planning officer, will extend his responsibilities from finance and financial planning into operations, including personnel (human resources) and facilities management.

Fetter joined the School of Medicine in 1983 as assistant vice chancellor for medical affairs.

University of Missouri-Columbia

■ A record 1,600 health professionals from six continents attended the 10th Annual Conference on Peritoneal Dialysis Feb. 8-10 in Dallas. The meeting, sponsored by the University of Missouri-Columbia, is the world's largest conference focusing on PD.

Karl D. Nolph, M.D., professor and director of nephrology at MU's School of Medicine, served as conference chairman. In the 1970s he helped pioneer continuous ambulatory peritoneal dialysis, the most popular form of PD. About 18,000 Americans nearly 50,000 people worldwide now use PD.

During a banquet held in conjunction with the conference, Nolph was presented the *American Kidney Fund's National Torchbearer Award for 1990* for his contributions to the field of nephrology.

MU professors serving on the conference faculty included: **Martin A. Alpert, M.D.,** professor and interim director of cardiology; **E. Dale Alpert, M.D.,** professor and director of the division of infectious diseases; **Margaret Flynn, Ph.D.,** professor emeritus of family and community medicine; **Ramesh Khanna, M.D.,** professor of nephrology; **Barbara Prowant, M.S., R.N., C.N.N.,** research associate in the division of nephrology; **Zbylut J. Twardowski, M.D.,** professor of nephrology; and **John Van Stone, M.D.,** professor of nephrology and medical director of Dialysis Clinic Inc. in Columbia.

The 1991 conference will be held Feb. 6-8 at the Opryland Hotel in Nashville.

■ An article by **Kim Wise, Ph.D.,** professor of molecular microbiology and immunology, and **Renate Rosegarten, Ph.D.,** a postdoctoral fellow from West Germany, was featured on the cover of the Jan. 19 issue of *Science.* The researchers found that mycoplasmas, a group of animal pathogen, have a unique way of spontaneously changing their surface proteins quickly, which could be vital to their survival in responding to environmental stimuli. Mycoplasmas are responsible for walking pneumonia in humans and several diseases in swine.

■ **Martin A. Alpert, M.D.,** interim director of cardiology, was an invited guest speaker Dec. 16 at the 22nd "Frontiers in the Diagnosis and Treatment of Cardiovascular Disease" in New York.

■ **Robert R. Conway, M.D.,** assistant professor, and **Roger Thomas, M.D.,** resident physician, both of the department of physical medicine and rehabilitation, had the manuscript "Isolated Complete Denervation of the Flexor Pollicis Longus" accepted for publication in the *Archives of Physical Medicine and Rehabilitation.*

■ **Jack J. Curtis, M.D.,** professor and chief of cardiothoracic surgery, served as a visiting professor recently for Long Island Jewish Medical Center's Grand Round Lecture Series in New Hyde Park, N.Y.

■ **Marilyn J. Duncan, Ph.D.,** assistant professor of anatomy and neurobiology, has received a First Award from the National Institutes of Health for a project titled "Reproductive Consequences of Neural Melatonin Receptors." The $448,815 award, covering a five-year period, was made by the National Institute of Diabetes and Digestive and Kidney Diseases.

■ **James C. Ellsasser, M.D.,** has joined the department of surgery as an associate professor of clinical orthopedic surgery and also is serving as medical director of the workers' compensation effort at MU. Ellsasser, formerly of Barnes Hospital, was well-known in St. Louis as team physician for the football Cardinals.

■ **Herbert A. Ferrari, M.D., J.D.,** professor of anesthesiology and surgery, had the article "Suing for Restitution: The Medical Malpractice Crisis" published in the January 1990 issue of *USA Today* magazine.

■ **Marilyn R. James-Kracke, Ph.D.,** assistant professor of pharmacology, and **Ingrid K. Bozoky,** senior researcher, presented an abstract at the annual meeting of the American Physiological Society in Rochester, Minn.

■ **Allan W. Jones, Ph.D.,** professor and chairman of physiology, has been selected to chair the Experimental Cardiovascular Sciences Section of the National Institutes of Health through June 1990. He also is on the parent committee to review the Hypertension SCOR grants for NIH and has chaired one site visit to the Cleveland Clinic Foundation.

■ **Joyce A. Mitchell, Ph.D.,** director of the School of Medicine's Information Science Group, has been elected as a fellow of the American College of Medical Informatics. Her election was based on national contributions to the field in research, teaching and service. She recently spoke at a National Library of Medicine banquet in Washington during a seminar on teaching medical students to use Grateful Med.

■ **Vaskar Mukerji, M.D.,** assistant professor of cardiology, spoke on Stress Behavior and Myocardial Ischemia at the Texas Heart Institute Conference Dec. 9 in Houston. He presented "Chest Pain with Normal Coronaries:Implication for Treatment."

■ **Gilbert Ross, Jr., M.D.** professor and chief of the division of urology, has been elected president of the South Central Section of the American Urological Association.

■ **Richard Schmaltz, M.D.,** clinical assistant professor of surgery, has been appointed chief of cardiothoracic surgery at Harry S. Truman Memorial Veterans Hospital.

■ **Hugh E. Stephenson, Jr., M.D.,** *John A. Growdon Distinguished Professor of General Surgery,* was elected secretary of the newly organized Surgical Caucus of the American Medical Association.

■ **John T. Turner, Ph.D.,** assistant professor of pharmacology, and **Jean Camden,** research associate, presented an abstract at the annual meeting of the Society for Neurosciences in Phoenix.

■ Six MU researchers recently published an article, "Adverse Effects of Permanent Cardiac Internal Defibrillator Patches on External Defibrillation" in the *American Journal of Cardiology*. They are: **Joseph T. Walls, M.D., John C. Schuder, Ph.D., Jack Curtis, M.D., Hugh E. Stephenson, Jr.,** and **Wayne McDaniel,** Ph.D., all of the department of surgery; and **Greg Flaker, M.D.,** of the division of cardiology.

■ A team of four researchers recently made a presentation on Substernal Thyroid Goiter to the American College of Chest Physicians in Boston. They are: **Rodney Landreneau, M.D., Weerachai Nawarawong, Stephen R. Hazelrigg,** M.D. and **Theresa Boley,** R.N., B.S.N., all of the division of cardiothoracic surgery.

■ The department of physiology has received a gift of $98,500 from Marion Laboratories to support special cardiovascular projects for **Virginia Huxley, Ph.D., Mark Milanick, Ph.D., E. Lee Forker, M.D.,** and **Michael Rovello, Ph.D.**

Two of the faculty members have been awarded NIH funding renewals. Huxley received a five-year, $569,869 grant, and Milanick will research under a three-year, $268,154 grant.

In Memoriam

■ **Daniel E. Holmes, M.D.,** died December 5, 1989 at the age of 59. Dr. Holmes, an internist, practiced medicine in Springfield, Missouri. He obtained his medical degree at the Washington University School of Medicine in 1955. Dr. Holmes was a member of the Greene County Medical Society.

■ **Edward A. Samuelson, M.D.,** died January 1, 1990 at the age of 89. Dr. Samuelson, a family practitioner, practiced medicine in Kansas City for 40 years before retiring in 1978. He served in the Army Medical Corps during World War II and retired from the Army as major in 1953. He obtained his medical degree at the Kansas University School of Medicine in 1937. Dr. Samuelson was a member of the Metropolitan Medical Society of Greater Kansas City.

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New Members

■ **Jeanne A. Drisko, M.D.,** Menorah Medical Center, 4949 Rockhill Road, Kansas City 64110, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Drisko received her preliminary education at Washburn University and obtained her medical degree at the Kansas University Medical College in 1979. She completed her residency at St. Luke's-Roosevelt, New York City, NY. Dr. Drisko specializes in radiology.

■ **C.R. Holbrook, III, M.D.,** Dept. of Emergency Medicine, 1000 Carondelet Drive, Kansas City 64114, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Holbrook received his preliminary education at Texas A&M University and obtained his medical degree at the University of Texas Medical School in 1982. He completed his residency at TTU-El Paso Health Center, El Paso, TX. Dr. Holbrook specializes in emergency medicine.

■ **Stephen G. Huk, M.D.,** Tri-County Mental Health Center, 2900 Hospital Drive, North Kansas City 64116, has become a member of the Clay-Platte County Medical Society. Dr. Huk received his preliminary education at the University of Notre Dame and obtained his medical degree at the St. Louis University School of Medicine in 1981. He completed his residency at St. Louis University, St. Louis, MO. Dr. Huk specializes in child and adolescent psychiatry.

■ **Loren J. Humphrey, M.D.,** M580, One Hospital Drive, Columbia 65212, has become a member of the Boone County Medical Society. Dr. Humphrey received his preliminary education at Albion College and obtained his medical degree at the University of Illinois College of Medicine in 1956. He completed his residency at the University of Illinois Research and Education Hospital, Chicago, IL. Dr. Humphrey specializes in surgery.

■ **Victor E. Isaacs, D.O.,** 103 Jefferson, Scott City 63780, has become a member of the Cape Girardeau County Medical Society. Dr. Isaacs received his preliminary education at Butler University and obtained his osteopathic degree at Kirksville College of Osteopathic Medicine in 1978. He completed his residency at City Line Hospital, Philadelphia, PA. Dr. Isaacs specializes in family practice.

■ **Edwin T. Long, M.D.,** Columbia 65203, has become a member of the Boone County Medical Society. Dr. Long received his preliminary education at Columbia University and obtained his medical degree at the Columbia University College of Physicians and Surgeons in 1947. He completed his residency at the University of Chicago, Chicago, IL. Dr. Long specializes in thoracic and cardiovascular surgery.

■ **Richard L. Morgan, M.D.,** St. Joseph Hospital, 1000 Carondelet, Kansas City 64114, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Morgan received his preliminary education at the University of Kansas and obtained his medical degree at the University of Kansas School of Medicine in 1980. He completed his residency at St. Luke's Hospital, Kansas City, MO. Dr. Morgan specializes in anesthesiology.

■ **Ekkehard Othmer, M.D.,** 4800 N.W. 88th Street, Kansas City 64154, has become a member of the Clay-Platte County Medical Society. Dr. Othmer received his preliminary education at the University of Hamburg - West Germany and obtained his medical degree at the University of Hamburg-West Germany in 1967. He completed his residency at Washington University Medical Center, St. Louis, MO. Dr. Othmer specializes in psychiatry.

■ **Joseph J. Parelman, M.D.,** Mid-America Eye Center, Inc., 6724 Troost, Suite 303, Kansas City 64131, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Parelman received his preliminary education at Duke University and obtained his medical degree at the Duke University School of Medicine in 1982. He completed his residency at Washington University Medical Center, St. Louis, MO. Dr. Parelman specializes in ophthalmology.

■ **Lynn H. Roh, M.D.,** 4801 Cliff Avenue, Suite 204, Independence 64055, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Roh received her preliminary education at the University of Nebraska and obtained her medical degree at the University of Nebraska College of Medicine in 1984. She completed her residency at the University of Nebraska Medical Center, Omaha, NE. Dr. Roh specializes in otolaryngology.

■ **L. Michael Silvers, M.D.,** Truman Medical Center East, 7900 Lee's Summit Road, Kansas City 64139, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Silvers received his preliminary education at Manchester College and obtained his medical degree at the Ohio State University College of Medicine in 1964. He completed a rotating internship at Santa Barbara Cottage Hospital, Santa Barbara, CA. Dr. Silvers specializes in family practice.

■ **Leslie D. Thomas, M.D.,** 2700 Hospital Drive, Suite 250, North Kansas City 64116, has become a member of the Clay-Platte County Medical Society. Dr. Thomas received his preliminary education at William Jewell College and obtained his medical degree at the St. Louis University School of Medicine in 1980. He completed his residency at the University of Illinois, Chicago, IL. Dr. Thomas specializes in orthopaedic surgery.

■ **Ronald R. Weis, M.D.,** Carondelet Radiology, Inc., 1010 Carondelet Drive, Kansas City 64114, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Weis received his preliminary education at Northwest Missouri State University and obtained his medical degree at the University of Iowa College of Medicine in 1984. He completed his residency at the University of Oklahoma Health Sciences Center, Oklahoma City, OK. Dr. Weis specializes in diagnostic radiology.

■ **Glen R. Willie, M.D.**, 2700 Hospital Drive, Suite 240, North Kansas City 64116, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Willie received his preliminary education at the University of Chicago and obtained his medical degree at the University of Minnesota School of Medicine in 1976. He completed his residency at Sinai Hospital of Detroit, Detroit, MI. Dr. Willie specializes in nephrology.

■ Resident Sections

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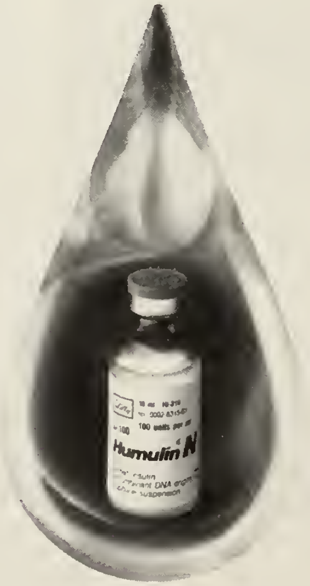

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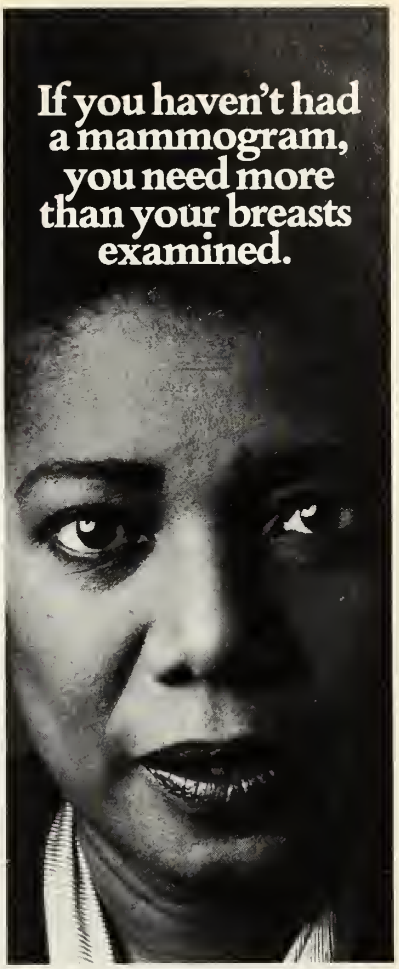
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References:

1. A. Morales et al., New England Journal of Medicine: 1221. November 12, 1981.
2. Goodman, Gilman — The Pharmacological basis of Therapeutics 6th ed., p. 176-188. McMillan December Rev. 1/85.
3. Weekly Urological Clinical letter, 27:2, July 4, 1983.
4. A. Morales et al., The Journal of Urology 128: 45-47, 1982.

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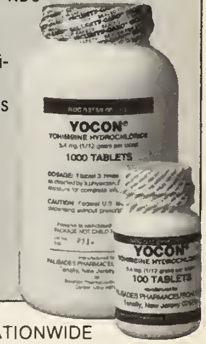

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Missouri Medicine

Journal of the Missouri State Medical Association

April 1990

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- Missouri Tort Reform

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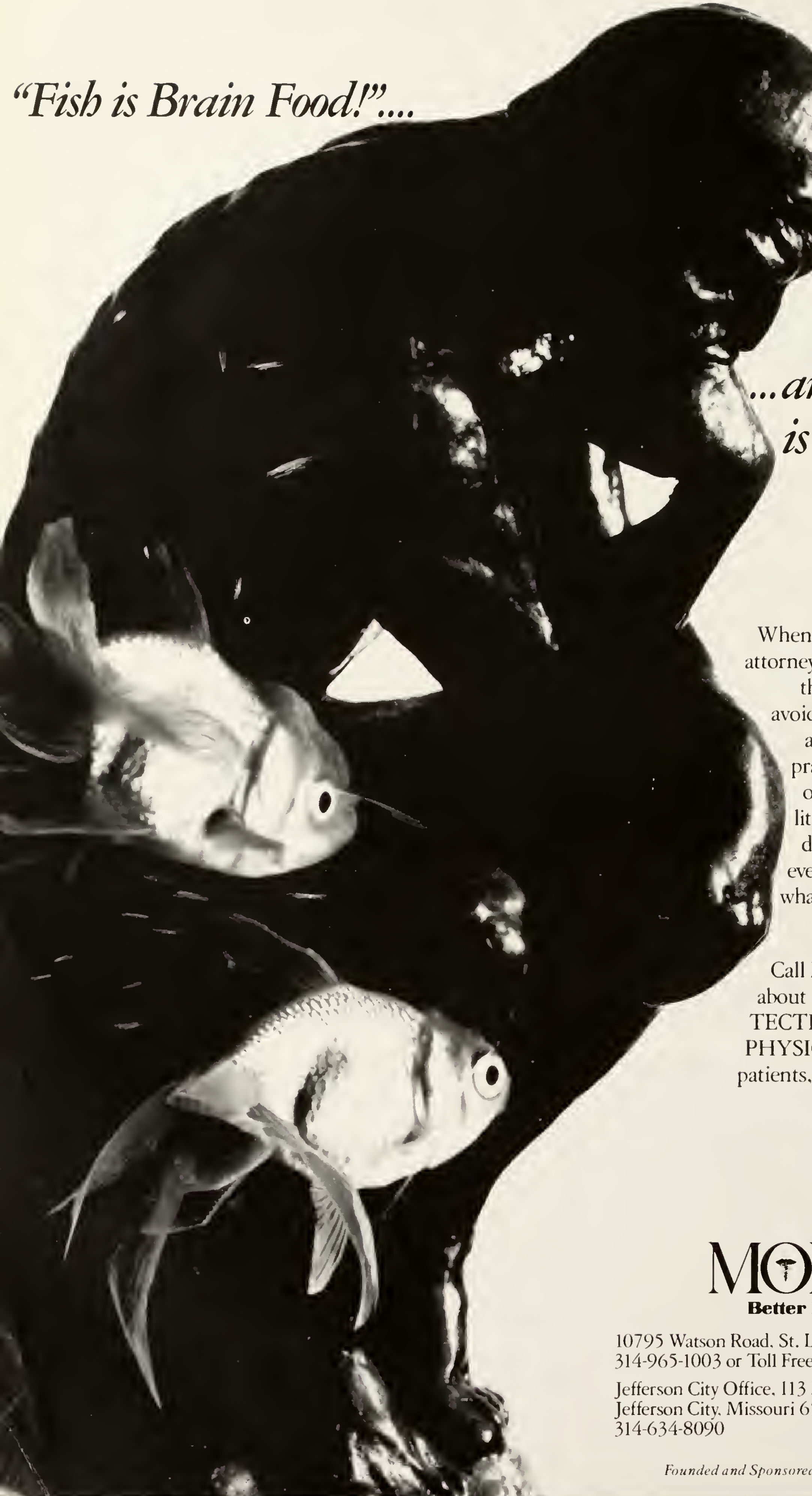
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"Burfordville Covered Bridge," is a photograph taken by **Walter A. Schroeder, Jr., D.O., M.D.** The bridge is one of only four covered bridges remaining in Missouri. It was started in 1858 but not completed until 1868 because of the Civil War. Dr. Schroeder is an otolaryngologist from Cape Girardeau, MO.

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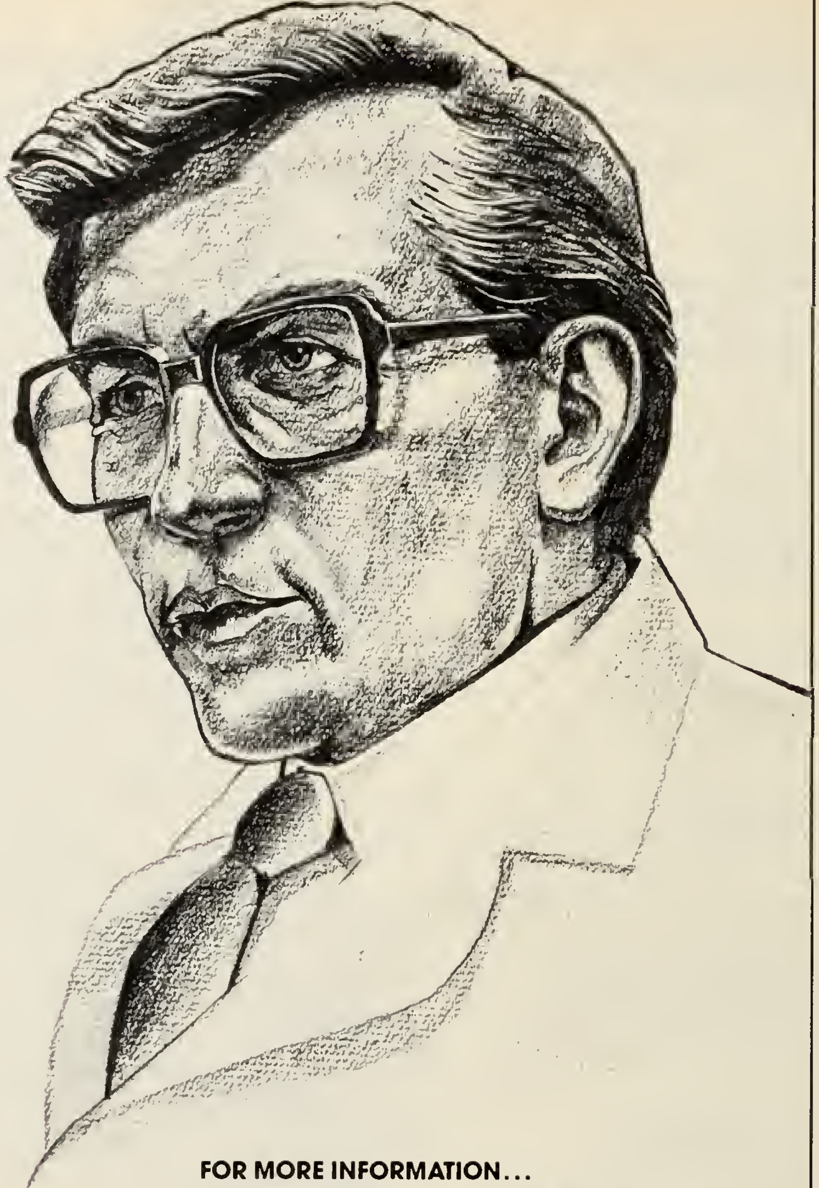

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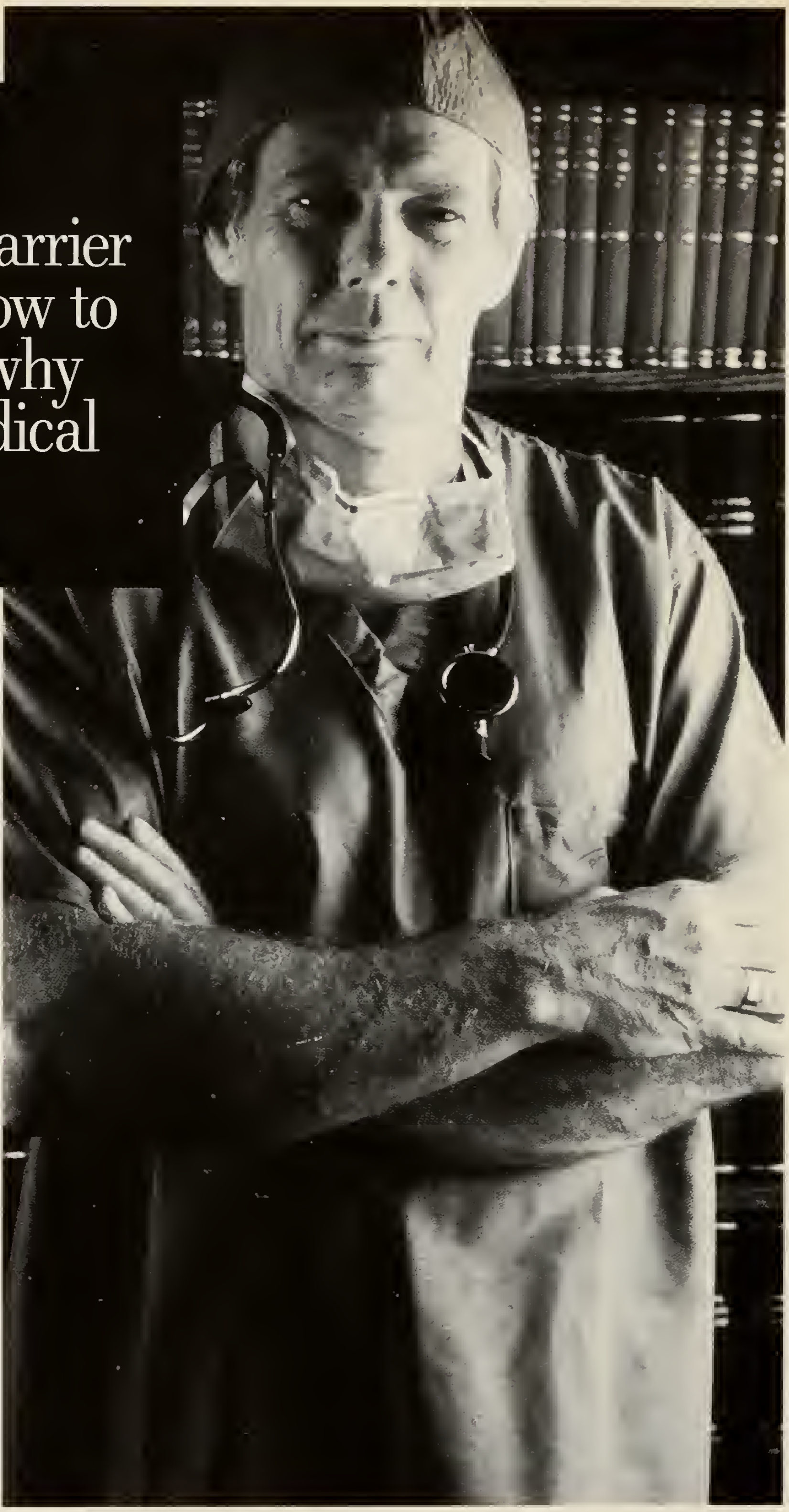

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EDITOR'S DESK

by J. Michael Conoyer, M.D.
Guest Editor

Editor's Note: *Dr. Conoyer is Chairman of the Disciplinary Committee for the Missouri Board of Registration for the Healing Arts and MSMA 4th District Councilor.*

Should the Practice of Medicine Be Defined in Missouri?

In all 50 states, boards of medical examiners are responsible for regulating the practice of medicine. This responsibility involves protecting the public and the medical profession itself, through mainstream medical licensing, discipline and the investigation of non-physicians engaged in the illegal practice of medicine.

Even with the growing complexity of medical practice, many states have neither a statutory nor a regulatory definition of the practice of medicine. Historically, the belief has been promulgated that the absence of a definition of medical practice is least confining and allows for the broadest interpretation. In reality, this position has deferred the guidance on what constitutes actual practice to "common law," and therefore the courts. Moreover, other health care professions have obtained statutory definitions allowing them to "stake a claim" in the health care delivery system.

One prominent Missouri physician compares the situation to that of an owner and operator of a 200-acre farm. As technology improved, the farmer was better able to grow good crops. He noticed encroachment on his unfenced borders by surrounding landowners, but remained unconcerned until the neighbors had taken all but 40 acres of his tillable soil. Only then did he see the need for fencing his farm. Needless to say, Missouri physicians have much in common with this farmer.

The spectrum of physician activity now encompasses a cadre of innovative endeavors. Medical director, peer reviewer and expert witness are a few non-traditional roles in which physicians use their education, training, experience and licensure.

The working "common law" hypothesis indicates that the diagnosis and treatment of a patient by a physician for a fee, constitutes the practice of medicine. While this definition aids in evaluation of "hands on" patient care, it gives no direction whatsoever into the evaluation of the more non-traditional physician roles.

To be fair to the public and the profession, Missouri needs a definition of the practice of medicine to serve as a guideline to physicians who engage in any form of medical endeavor. The definition is also needed in order to give the Board of Healing Arts a standard by which to judge a physician's performance. There should be no distinction between the legal, moral and ethical obligations of a physician providing "hands on" patient care and one who functions as a medical director, peer reviewer, expert witness or who fills any other role that a physician is uniquely qualified to perform.

Currently, the Missouri Board of Registration for the Healing Arts is involved in litigation which will serve to further delineate what the practice of medicine does and does not entail. Additionally, in conjunction with MSMA and MAOPS, the Board has introduced legislation (Senate Bill 737) which asks the legislature

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to allow the Board to define the practice of medicine by regulation. If enacted, this law would permit responsive flexibility in the practice definition as inevitable changes in the practice environment occur. Furthermore, because of the present rule-making process, safeguards exist in the form of legislative oversight which will ensure a "check-and-balance" on any proposed definition.

We are pleased and honored to have Senator Stephen R. Sharp of Kennett and Representative Jerry Burch of Walker as the sponsors for this bill in the Missouri Senate and House, respectively. These distinguished and tenured legislators have taken the time to help advance efforts to improve health care legislation in Missouri over a period of years. We sincerely appreciate their support.

It is my personal belief that a definition of medical practice is highly desirable in Missouri. I encourage every Missouri physician to obtain a copy of Senate Bill 737 from his/her legislator and to review it carefully. After you have studied it, share your comments with MSMA, the Board and most of all with your legislator.

Corrections

In the March 1990 Editor's Desk, "Caring," several errors appeared. The following is a list of corrections.

1. Page 127, first column, third paragraph: Sentence should have read: Competence and scientific knowledge are not enough to make a physician effective.
2. Page 127, second column, second paragraph: Sentence should have read: Caring is always understood within a context.
3. Page 128, reference 1: Title of book should be *The Primacy of Caring.*
4. Page 128, reference 6: Author's name should be spelled Kestenbaum.

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President's Page

by Marvin A. Singleton, M.D.
MSMA President

The case of Nancy Cruzan and her parents' struggle to see her die in peace, has opened an active can of worms in Missouri as well as the nation. It is time for physicians to be heard and to have an impact on the decisions to be made.

Death With Dignity

The preservation of an individual's right of self-determination does not exist in the state of Missouri. The decision to withdraw artificial hydration and/or nutrition from an irreversibly comatose patient should be allowed when directed by the patient, family, medical proxy, or by prior living-will declaration of the patient. Physicians in Missouri find themselves in acute situations in which the evaluation of a patient is questionable. In some cases, until the patient can be stabilized in order to determine if nutrition and hydration supplied in adequate amounts could restore some degree of cognitive-affective function, physicians cannot make an accurate evaluation.

Close to home is the case of Nancy Beth Cruzan, which continues to be played out in the Missouri Assembly this year. There has been an intense, behind-the-scenes lobbying effort to influence three bills introduced into the Missouri Assembly designed to help solve many of the ethical and realistic problems faced by this category of patients. The Missouri Declaration on "Living Will" prohibits the withdrawal of artificial nutrition/hydration and is clearly an infringement on the actions of an individual by the state of Missouri. Resolution 14, passed by the Missouri State Medical Association House of Delegates in St. Louis at the 1989 Annual Meeting, urged that ethical decisions such as the right to refuse treatment, be left to an individual, his family and/or "Health Care Surrogate," and not to the state. That resolution urged passage of satisfactory "Health Care Surrogate" legislation and the deletion of the restrictive phrase prohibiting withdrawal of nutrition and hydration. Unfortunately, it appears that once again physicians are caught between providing the very best health care to a patient by putting in feeding tubes in order to stabilize and support an individual, but being unable to withdraw that care once a medical determination is made in conjunction with the family and patient's wishes. Only the Supreme Court is willing to decide each issue. It is time for physicians in Missouri to make this quandary known to our legislators and urge some type of relief for the medical practitioner who has ordered the very best of care for his patient but is unable to terminate that care when appropriate. ■

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Auxiliary Message

by Marge Perkins
Health Projects
Chairman

1989-90 was a good year for Health Projects. The Missouri State Medical Association Auxiliary and its component society auxiliaries continue to do their part to help promote good public health while working to enhance the image of the medical profession.

Health Projects: A Successful Year

Across Missouri, auxiliaries have been busy this year with health projects. I would like to take this opportunity to thank all the auxilians who have worked through their auxiliaries and through other organizations within their communities to further our efforts in health education and health awareness. Here are a few of the highlights:

St. Louis Metro: Continuing a project started last year, efforts have been directed toward the Youth Emergency Services (YES) crisis shelter. A tour of the facility conducted in autumn allowed members to see firsthand the important work of the center. A "Fun and Games Night" Fundraiser was held in the winter, with gifts and baskets prepared and donated during the holiday season. Last spring, a "Youth in Crisis" program was presented to make the members more aware of the stresses on today's teens.

Cole County: During the summer, members delivered amblyopia kits to pre-schoolers at nursery schools, churches, and mothers-morning programs.

Members continue to assist with Meals on Wheels one day each month, a long-standing commitment.

In September, the medical auxiliary combined with the Osage Valley Osteopathic Auxiliary to promote "The Night of the Magic Moon," a fundraiser for the Cole County unit of the American Cancer Society. The combined efforts made the gala quite a success, both in raising $8,000 for cancer research and in showing what can be accomplished when groups work as a coalition.

Clay-Platte County: The medical society and the auxiliary prepared, printed, and distributed forms for parental/guardian use when leaving a child under the age of 18 in the care of another. The "Authorization to Consent Treatment of a Minor Child" form is required by law unless injuries are life-threatening. This form is convenient to use and serves as a reminder to the parent to take necessary precautions so that the child may receive proper treatment in an emergency.

Metro-Med of Kansas City: The auxiliary has just started a target awareness project that will be an ongoing program for junior high and high school students. The project will involve the purchase of videocassettes dealing with drug abuse and AIDS, titled "It Can't Happen to Me," and the training of volunteers to present programs and lead discussions facilitated by retired physicians. The kickoff took place in March at the Kansas City Chemical Health Week, a week-long drug awareness campaign to assist schools in presenting a concerted effort in fighting substance abuse.

Buchanan County: A day-long seminar was held on "Enhancing the Medical Marriage," culminating in the evening with dinner and a speaker. Topics focused on parenting, the mature/empty nest marriage, red-flag warnings to watch for, stress reduction, and

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Auxiliary Message

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the super-man/super-wife syndrome. Its success led to an appeal to offer similar seminars on a regular basis.

Greene County: The auxiliary continues to staff and support its well-established Health Education Center.

Boone County: A committee is making progress in establishing a Health Adventure Center, and Organella and her mentors are busy almost every day in kindergarten classes.

Jasper County: The auxiliary held its Health Fair again this year.

South Central County: Debbie Barbe (Mrs. David) meets with second graders (the Class of 2000) to promote the smoke-free society and to discuss problems related to smoking.

In these and all the other health projects, we take a great deal of pride. These endeavors make all of medicine look good! ■

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PRACTICE MANAGEMENT

by Janice K. Woerth, Ph.D.

Do you have a question for Dr. Woerth? Include your questions along with your name, address and phone number and send them to:

Janice K. Woerth, Ph.D.
Practice Management
c/o Missouri Medicine
P.O. Box 1028
Jefferson City, MO 65102
Or call her direct:
816/587-1125

Although your name will not be used in the journal, please include your name and phone number so that Dr. Woerth may contact you if she needs additional information to answer your question.

Dear Dr. Woerth:

I spend a certain amount of time each day returning telephone calls to my patients. I find that some patients tend to use a telephone call in lieu of an office visit when they have minor medical problems. Is there any way that I can charge for telephone calls?

X. C.

Dear X.C.:

There are codes listed in the CPT book that cover telephone calls. They are codes 98920-98922 and they represent simple/brief, intermediate and complex/lengthy telephone calls respectively. Please note that these codes are to be used when the physician places the telephone call. These codes are new to the 1990 CPT book so if your CPT is older than 1990, they will not be listed.

Dear Dr. Woerth:

I recently received a claim back from Medicare in which my reimbursement was significantly less than I billed. I noticed that the CPT code we used was marked with a -cc after the code. Do you know what this means?

F.B.

Dear F.B.:

When a CPT code is followed by a -cc, it means that Medicare has changed your code (cc=code change). In most cases, as with yours, the procedure has been down-coded, i.e. they have paid for a lesser costing service than you submitted. Why does this happen? Generally I find that down-coding occurs when the diagnosis is not specific. For example, if you list "fracture" as the diagnosis using the ICD-9-CM code 829.0 (fracture of unspecified bone, closed), you will be paid for the least expensive fracture, like a broken nose or finger. Your procedure may indicate that you repaired a femur fracture, but your diagnosis does not support this. Thus, your procedure is down-coded. This happens frequently on Medicare and other insurance company claims. It can be very costly to the medical practice.

Dear Dr. Woerth:

I have received several Explanation of Benefits from insurance companies that say they are not paying for a service because it is a non-covered service. I'm very frustrated by insurance companies that refuse to pay for services I provide. Is there anything I can do about this?

H.D.

Dear Dr. H.D.:

When a person purchases insurance coverage from an insurance company, the beneficiary (or in many cases, the employer who is purchasing coverage for his employees) decides which services will be covered by the insurance policy. The beneficiary can elect how much deductible he wishes to pay and the extent of the medical coverage. The insurance company then decides the cost of this coverage based on the beneficiary's medical history, age and lifestyle (smoker vs. non-smoker). When you receive notice that a service is non-covered, this indicates that the beneficiary (your patient) has not purchased insurance coverage for that specific service. Thus, the patient is financially responsible for the non-covered service. This is generally true regardless of the type of insurance the patient has. For Medicare, a list of non-covered services is outlined in *The Medicare Handbook* available from your Medi-

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Practice Management

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care carrier. Please note that if the patient has Medicaid and the service is non-covered, it is not likely that the patient will be able to pay for the service.

When you know, I think that it is a good idea to inform patients *before* services are rendered that the service is likely to be non-covered. Tell the patient that he/she will be responsible for the cost of the service. This eliminates any inquiries the patient would have made upon receiving the statement from your practice. ■

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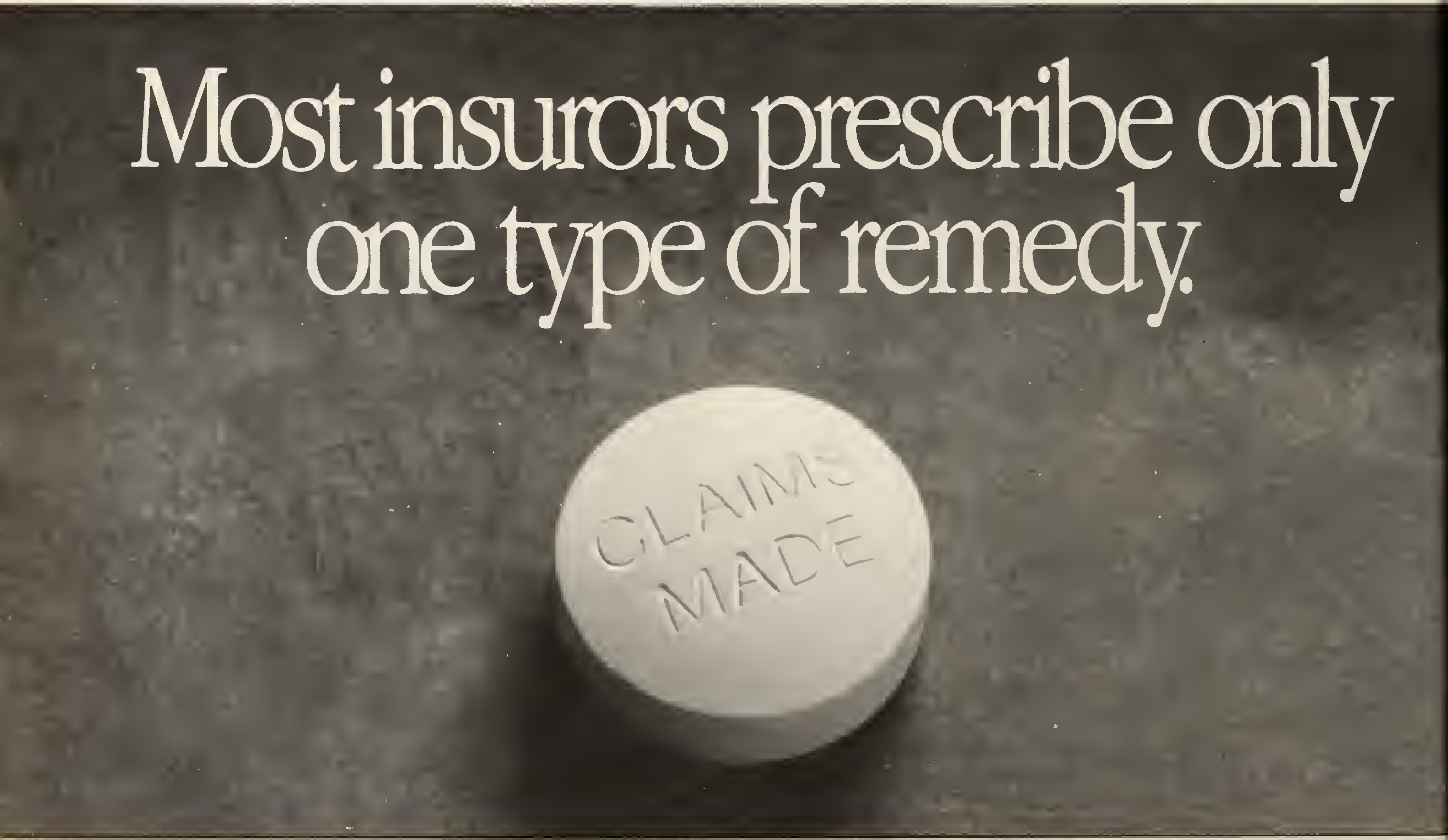

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SPECIAL REPORT

Missouri Tort Reform

by Gary A. Dyer, M.D.
St. Joseph, Missouri

Missouri tort reform has a long and colorful history. Gary A. Dyer, M.D., prepared the following report for the MSMA Council. It is being reprinted in **Missouri Medicine** as a reference for all MSMA members.

I. 1976 General Assembly

A. **SB 470 - Statute of Limitations on Minors-10+2.** Foreign Body-2 years from discovery or maximum of 10 years.
Struck down by Mo. Supreme Court. Went back to 21+2.

B. **SB 471 - Review Panels Established.** 2 Physicians, 2 Attorneys, 1 Layman, 1 non-voting circuit judge.
Reduce frivilous suits.
Struck down by Supreme Court.

C. **SB 472 - Strengthen Board of Registration for Healing Arts.** Suspend or revoke license-Medical incompentency; Treatments contrary to medical standards; Consistant use of services that are medically inappropriate.
Could compel a physician to submit to a medical competency re-examination.

D. **HB 1306 - Definition of Informed Consent**
Did not pass.

E. **HB 1307 - Claimant must ask for "fair and reasonable" compensation, rather than state the amount.** (Ad Damnum Clause).

F. **HB 1308 - Malpractice insurance companies must report all claims to the Director of the Missouri Division of Insurance.**

G. **HB 1309 - Enabling legislation to establish a Joint Underwriting Association to provide professional liability insurance if such insurance becomes unavailable through commerical companies.**

H. **HB 1312 - Permit admission of collateral sources of payment in malpractice cases.**
Did not get out of Senate Committee.

I. **Albert M. Spradling** (D-Cape Girardeau)
Headed a special Senate Committee on Malpractice.
Sponsored much of the malpractice legislation.
Called the six bills that passed "the No. 1 package of malpractice law in the U.S." and said that they would withstand court tests of their constitutionality.

II. 1976 Fall. Special Meeting of the House of Delegates of MSMA

A. **Ad Hoc Committee on Malpractice.** *Resolution adopted.*
Analyze the problems and accomplishments in other states.
Return to HOD recommendations for resolving the problems.

B. **Medical Liability Clearinghouse.** *Resolution passed.*
Each MSMA member submit to MSMA information as to number and disposition of malpractice suits filed. Develop statistics.

C. **Health Care Accident.** *Resolution passed.*
MSMA investigate and campaign for legislation to remove the unforseen health care accident from the civil liability tort system.

III. 1985 - CPHC (Committee to Preserve Health Care)

A. **Composition: Seven voting members.** *Buy way to table.*
(1) MSMA
(2) MAOPS
(3) MHA
(4) MOMEDICO
(5) MDA
(6) RCA
(7) HSG

B. **Purpose: United front as patient advocates in negotiating tort reform matters with MATA.**

C. **Why a coalition:**
(1) Solidarity of interests and goals.
(2) Physicians have little strength in bargaining power.
(3) Legislature and MATA view the seven as a unit.

IV. 1986 SB 663 - Missouri Tort Reform Act of 1986

Compromise bill-CPHC negotiated with MATA.
Moratorium three years.
Unwritten agreement.
Components:
(1) **Cap on awards for Non-Economic Loss.**
$350,000 per defendant.
Punitive awards not capped.
Punitive damages only awarded for "demonstrated willful and wanton misconduct" (not conscious disregard).
(2) **Awards for Non-Economic Loss Adjusted for Inflation.**
(3) **Itemization of Awards** (present dollar value).
Past economic.
Future economic excluding medical.
Past non-economic.
Future non-economic.

(4) **Structured Awards.**
  Past economic and non-economic paid at the time decision is final.
  Future economic and non-economic over $100,000 structured at request of either defendant or plaintiff.

(5) **Affidavit of Expert.**
  Within 90 days of filing lawsuit.
  Statement from legally qualified physician stating case has merit.
  State why and how physician is legally qualified to offer such an opinion.
  Failure to file — Judge may dismiss the case without prejudice.

(6) **Modified Joint and Several Liability.**
  Any defendant is jointly liable only with those defendants whose apportioned percentage of fault is equal to or less than such defendant.

(7) **Mandatory Insurance.**
  Counties with greater than 75,000 population — At least $500,000.

(8) **Prospective Clause — Emergency.**
  Emergency — Malpractice incidents on or after date of enactment of law.
  Mandatory provisions — Separate date.

(9) **Severability Clause.**
  Any part struck down by the courts does not affect the rest.

(10) **Mandatory Reporting. Limitations on Doctors Privileges.**
  Hospital Boards of Trustees must report to BOHA any disciplinary actions or restrictions taken against any physician.

(11) **Temporary Suspension of License.**
  BOHA given authority to make temporary, immediate suspension of physician's license.
  Due process allowed but speeded up.

(12) **Mandatory Review of Open Claims.**
  Division of Insurance to collect and submit to BOHA.
  BOHA to review and take appropriate action.

V. Who Got What? Who Wanted What? Possibilities.

A. **Hospitals** (someone to share the heat).
  Mandatory Insurance for Physicians.
  Modified Joint and Several Liability (wanted elimination).
  Moratorium (happy with).

B. **Insurance Companies** (make a profit; write more insurance).
  Caps. . . . . Predictability.
  Affidavit. . . . . .Accountability.
  Affordability — Premium prediction and setting of rates.
  Moratorium (not unhappy with).

C. **MATA**

- Preserved contingency fees.
- Mandatory insurance — deep pockets.
- Affidavit — "Shall to May".
- Physician Level of tort reform not extended to product liability (SB 700).
- Moratorium (Wanted 5 years).
- (Wanted statute changes: Raise, or Discovery, or Tolling Letter).
- (Wanted pretrial interest).
- (Wanted $2,000,000 mandatory insurance).

D. **Physicians**

- Affidavit — Decrease frivolous suits (thought had "shall" or "must").
- Modified joint and several liability (wanted elimination).
- Caps (wanted lower caps).
- Better deal than business — SB 700.
  - (Wanted Collateral Source).
  - (Wanted Contingency Fee Control — Sliding scale or elimination).
  - (Wanted Expert Witness Definition).
  - (Wanted lower statute of limitation on minors).
  - (**Really wanted whatever it would take to lower premiums and eliminate frivolous suits).

VI. 1986-1989. Moratorium Period (Is the Law Working?)

- No new cases filed under new law brought to trial in Missouri.
- No court challenges to new law.
- Malpractice insurance available.
- Premiums overall slightly decreased.
- Number of suits slightly decreased.
- Awards and mega-awards slightly decreased.
- Barrons Article — Nationwide.
  - (1) Sharp decrease in number of patients filing suits.
  - (2) Big Ticket lawsuits began to decrease in 1985.
  - (3) Jury awards declining — Median decrease began in 1986.
    - a. Juries more wary.
    - b. Changes in state laws (tort reform).
      Content less significant than existence.
  - (4) More defensive posture by doctors and hospitals.
    - a. Defensible records.
    - b. Risk management.
    - c. Loss prevention — Anesthesia; OB transfer.
  - (5) Tougher stand by insurance companies (10 years of experience).
    Know how to defend.
  - (6) Lawyer awareness.
    - a. Decrease in frivolous or nuisance suits.
    - b. Attorney malpractice.

Most hospitals had or adopted mandatory insurance requirements.
Certain specialties have noted no benefit from the law.
Many physicians feel hospitals and insurance companies benefited more than physicians.
If there are improvements in the malpractice climate, are they due to tort reform or insurance cycles?

VII. 1989-1990 Tort Reform

A. **1989 - MSMA Annual Session:** *3 Resolutions Referred to Council for action* (14 April, 89).
  (1) #18 — Called for a Task Force to study tort reform and plan strategy for the next step by MSMA.
  — Gave a laundry list.
  (2) #5 — Called for Cost Containment in Malpractice Litigation.
  — Tort reform — limited laundry list.
  — Workman's compensation type of program.
  (3) #32 — Called for MSMA to Sponsor a Referendum to get California type tort reform.
  — HOD wanted more done in area of tort reform.
  — Unsure of the best approach.

B. **27 April, 89 Conjoint Executive Committee Meeting — MSMA, MHA, MAOPS**
  CPHC Report — Options:
  (1) Lift moratorium — Go to the Mat.
  (2) Seek new allies.
  (3) Limit discussions with MATA.
  (4) Continue moratorium.

C. **12 May, 1989 — Moratorium Ended.**

D. **CPHC Meetings.**
  (1) 24 May, 1989 — Monsanto representative and Bob Harmon guests.
  (2) 31 May, 1989 — Preliminary meeting with MATA.
  (3) 30 June, 1989
  (4) 31 August, 1989
  (5) 28 September, 1989
  (6) 7 November, 1989 — Most favored a **Limited Agenda** when meeting with MATA.
    a. Affidavit modification
    b. Expert witness strengthening
    c. Lower mandated coverage
    d. Medicaid — OB improvements
    — Also included were aggressive educational campaign and formalizing contract with allies
  (7) 14 November, 1989 — 2nd meeting with MATA. They added:
    a. Tolling letter — 90 day (12%) extension of statutes
    b. Pretrial interest
    —Agreement reached — Subcommittees formed to study three subjects:
      a. Affidavit
      b. OB-Medicaid
      c. Professional Liability Coverage Limits

E. **MSMA Activities.**
   - (1) 3 June, 1989 — MSMA Council Meeting — Resolutions formally referred to CPHC and Legislative Committee.
   - (2) 5 August, 1989 — Legislative Committee Meeting — Recommended: Encourage CPHC to pursue items listed in Resolution #18 with MATA with special emphasis on:
     - a. Strengthening affidavit requirements
     - b. Lowering age of majority to 18
     - c. Developing language to insure that expert witness is truly an "expert"
     - —Also stated that MSMA should seek out more allies — e.g., business, local governments
     - —Also, MSMA should prepare educational materials for members on advantageous effects of SB 663
   - (3) 10 November, 1989 — Executive Committee Conference Call
     - a. Endorsed limited agenda.
     - b. Instructions to the jury added to the list.

F. **11 January, 1990 — The Big Meeting — CPHC and MATA.**
   - (1) The subcommittees did not meet — Reason?
   - (2) We (MSMA and insurance companies) would not accept Tolling Letter.
   - (3) They agreed that State Fund coverage of physicians for malpractice dealing with Medicaid was not a tort matter.
   - (4) All parties agreed to one-year Certificate of Understanding and Unwritten agreement.
   - (5) All parties agreed to start meeting again after the General Assembly ends.

G. **The Meeting After the Meeting.**
   - (1) Need a Blue Ribbon Committee
     - a. Develop MSMA positions on tort reform before meeting with coalition.
     - b. What parts of tort reform translate into lower premiums?
     - c. What else can be done to decrease malpractice suits, malpractice premiums, and ultimately health care costs?
   - (2) Need to re-evaluate what is best for MSMA as far as coalition composition.

VIII. 27 January, 1990 — The Blue Ribbon Committee

A. **Recommendation:** That MSMA Council direct the President to appoint a Blue Ribbon Committee, made up of physician members knowledgeable about malpractice and tort reform, with representation from each Councilor district or from each part of the state. The committee would be instructed by the President to study all aspects of malpractice and tort reform, as well as Resolutions #5, #18, and #32, and bring back to the Council by the June, 1990 meeting its recommendations for the position MSMA should take on malpractice and tort reform for the 1990-1991 session of the Missouri General Assembly.

B. **Possible Questions for the Committee**
   - (1) Do we have significant tort reform in Missouri or are we in an insurance cycle?
   - (2) Is it true that the content of the tort reform package is less significant than its existence?

(3) What aspects of tort reform, if passed, would truly translate into decreased number of malpractice suits and/or decreased malpractice premiums?
(4) What tort reform would actually decrease OB malpractice insurance rates?
(5) Is a coalition better than going to the legislature separately?
(6) What is the best coalition for MSMA? — MSMA and Elderly? Business? Defense? Attorneys? MHA? etc.
(7) Should we be spending more time on education of the public or patients than on tort reform?
(8) Should we be spending more time on risk management than on tort reform? Should a risk management course be mandatory before getting malpractice insurance? Should it be mandatory at 3-5 year intervals in practice?
(9) Do Missouri physicians have the unity, or can it be developed to the point to carry out a successful initiative petition dealing with tort reform?
(10) Should part of all of malpractice be taken out of tort? Would cost savings or increases be the result?
(11) How much malpractice is out there? What portion represents bad results? Are there bad doctors in significant number? ■

SPECIAL ARTICLE

Indoor Air Quality and Environmental Tobacco Smoke

Stephen L. Meek, MSPH
Jefferson City, Missouri

Indoor air quality is a blanket term covering multiple factors that affect our home and work environments. The factors range from temperature and humidity to the concentration of various airborne pollutants. Indoor air pollutants are characteristically categorized as gases, particulates, or microbials.

A great deal of research is underway to learn more about the adverse health effects of these pollutants. Two different types of health effects are generally recognized.[1] One type, labeled Sick Building Syndrome (SBS), is characterized by somewhat diffuse symptoms that typically includes fatigue, upper respiratory irritation or congestion, eye irritation, difficulty in breathing, and headache. The symptoms diminish or disappear when the sufferer is away from the building. Most research on the cause or causes of SBS is centered on the pollutant gases, specifically the volatile and semivolatile organic compounds. The other type of health effect is labeled Building Related Illness (BRI) and includes allergic respiratory diseases, skin diseases, and acute infections. Extrinsic allergic alveolitis and Legionnaire's disease are examples of BRI. These diseases result from a specific exposure at the work place or home, frequently require medical intervention, and may be severe.

Investigation of problem buildings is often difficult, time consuming, and expensive. For this reason, investigations are often incomplete or misdirected.[2] An individual investigator's expertise is usually limited to one or two areas, and he is likely to find the cause and solution in these areas. The result may be a misdiagnosis and an unsuccessful remedial effort.

Although disagreement still exists, many authorities recommend a standard protocol for building investigations.[3] The protocol typically includes interviews with building occupants, a physical survey, an assessment of ventilation effectiveness where indicated, and sampling for specific contaminants only when there are strong cause-and-effect suspicions. A "shotgun" approach to sampling the indoor air in a search for possible culprits is expensive, technically difficult when done right, and seldom definitive. Interpretation of results is largely guesswork; there are few guidelines or standards by which to judge and only limited, sometimes conflicting, research results for reference.

Assuming the problem is with air quality and not an unrelated factor such as psychological stress or ergonomic design, the recommended solution usually falls into one of three general categories. The first of these is the most straightforward and usually the most effective: remove the source. When the source can be identified, this solution is simple and direct. An example might be a recommendation for replacing a gasoline-powered forklift with an electric one in a small warehouse. Other examples would be elimination of bacterial-contaminated standing water in or near an air conditioning system, or removal of mold-supporting, water-damaged ceiling tile.

The second solution category is to control the source. This can be nearly as effective as removal, especially where removal is not physically or economically feasible. Examples would be special exhaust ventilation for office printing equipment or the sealing of particle board products to reduce the emission of formaldehyde, an irritant gas.

The third solution category is most appropriate where the source either cannot be determined or cannot be directly controlled or removed: dilution of the contaminants. An example is increasing the delivery of fresh air via the heating or cooling system. Most systems are relatively easy to adjust.

Although not as satisfactory as removal or control, dilution is by far the most common solution. It is most often used because of the investigators' inability to identify the particular pollutant causing the problem.

The air in any building contains hundreds or thousands of compounds present at barely detectable levels. Some researchers believe the collective total of pollutants is the significant factor, not any individual constituents. There is evidence linking SBS to tight, energy-efficient buildings, which, by virtue of their reduced ventilation, contain elevated levels of a variety of common contaminants. One researcher reports that each 30% reduction in ventilation rates results in a 43% increase in indoor contaminants.[4] New buildings and newly remodeled buildings also have elevated contaminant levels, at least for a time.

After formaldehyde, the most prevalent cause of indoor air contamination is environmental tobacco smoke (ETS). Environmental tobacco smoke consists of both particulates and gases and contains several thousand compounds, some of which are human carcinogens. There is good epidemiological evidence that ETS poses an increased risk of respiratory disease for children involuntarily exposed at home, and there is growing evidence that involuntary smokers at work and home are at elevated risk of lung cancer.[5,6] Environmental tobacco smoke is an eye, nose, and throat irritant for many non-smokers, as well as some smokers, and appears to contribute to SBS symptoms.

The same recommendations apply for the treatment of ETS as for any other indoor air pollutant: removal, control, or dilution. Because the source of ETS is identifiable, the health effects relatively well understood, and its presence not required, removal is the obvious choice. The other options are either ineffective or too expensive to justify.

In a "sick building" where smoking is permitted, the single corrective measure of eliminating indoor smoking can often effect a "cure." If not, it is a significant first step toward achieving a quality indoor air environment.

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Editor's Note: Mr. Meek is an Industrial Hygienist II in the Bureau of Environmental Epidemiology, Missouri Department of Health, Jefferson City, Missouri.

SPECIAL SERIES

Bacterial Infections and AIDS

Victoria Fraser, M.D.
St. Louis, Missouri

HIV-positive patients are at risk for a number of serious bacterial infections. The author presents on overview of some common bacterial infections these patients are susceptible to and stresses the importance of early diagnosis for appropriate treatment.

Human Immunodeficiency Virus (HIV) is commonly recognized to cause defects in cell mediated immunity, resulting in opportunistic infections with various fungi, mycobacteria, and viruses.

HIV also affects B cell function, and results in impaired antibody responses to new antigens. In addition, HIV causes spontaneous B cell proliferation and polyclonal immunoglobulin synthesis, both of which are unfortunately nonspecific and thus dysfunctional immune responses. Patients with advanced HIV infection are also at risk for bacterial infection due to granulocytopenia because of therapy such as Zidovudine (AZT) or ganciclovir and chemotherapy for Kaposi's sarcoma.

In children with HIV infection, bacterial infections have long been recognized as the most common manifestation of early immunodeficiency. More recently, adults with HIV infection are also being reported with higher frequencies of bacterial infections than the general population; particularly spontaneous bacteremia, bacterial pneumonia with encapsulated organisms, bacterial diarrheal illnesses, syphilis, and catheter-related bacteremias. Bacterial infections in patients with AIDS-related complex (ARC) and AIDS are associated with higher rates of bacteremia and higher relapse rates compared to the normal population, but may be insidious or subtle in onset. It is important to recognize bacterial infections because they are treatable and controllable complications of HIV disease. This article will review the more common bacterial infections in AIDS, along with their special characteristics. Recommendations for evaluation and management of these infections will also be outlined.

Bacterial Pneumonia in ARC/AIDS

Although Pneumocystis carinii is the most common pulmonary infection in AIDS, bacterial pneumonias account for 3-10% of all pneumonias. The predominant pathogens in community acquired pneumonias have been encapsulated organisms: Streptococcus pneumoniae, Hemophilus influenzae, group B Streptococcus, and Branhamella catarrhalis. The attack rate for pneumococcal pneumonia in AIDS is estimated as high as 45.5 cases/1000 people (compared to a rate of 2.6/1000 in normal controls i.e., more than 15 times higher than controls). In HIV-positive patients pneumonias are also much more likely to be bacteremic. Fifty to 80% of such patients develop bacteremia. Furthermore, 30-50% of bacterial pneumonias in HIV-positive patients relapse despite appropriate antibacterial therapy.

Community-acquired pneumonias in HIV-infected patients present in a typical manner, i.e., sudden onset of fever, purulent sputum, pleuritic chest pain. This contrasts with the insidious onset of Pneumocystis carinii pneumonia (PCP) with gradually worsening dyspnea with fever. It is important to remember, however, that bacterial pneumonia may occur concomitantly with PCP. Trimethoprim-sulfamethoxazole (TMP/SMX) provides suitable empiric therapy for PCP along with therapy for the common causes of bacterial pneumonia. If pentamidine is used as PCP therapy, there is no antibacterial coverage and supplementation with specific antibacterial therapy is needed until culture results are known. For clear cases of bacterial pneumonia, penicillin remains the drug of choice for *S. pneumoniae*, and second and third generation cephalosporins (cefuroxime, ceftriaxone, cefotaxime) will provide good empiric coverage in cases where bacterial diagnosis cannot be made from the sputum gram stain. Ampicillin can also be used to treat *H. influenzae* and pneumococcal infection if the prevalence of betalactamase producing organisms is low. Community-acquired bacterial pneumonia in HIV disease responds well to appropriate therapy with a mortality rate of <10%.

Even after being infected with *S. pneumoniae*, many HIV-positive patients do not mount an appropriate antibody response and so remain at risk for recurrent infections, even with the same serotype! Pneumococcal vaccine failures have been reported in AIDS. Many patients with low CD4 lymphocyte counts (<450) do not develop antibody titers in response to pneumovax or influenza vaccine. However, vaccination may be beneficial in patients with relatively preserved immune function (CD4 counts > 450) and should be considered. HIV-infected children should receive *H. influenzae* vaccine. They may also benefit from monthly immunoglobulin. Prophylactic TMP/SMX may also decrease bacterial infections in HIV-positive children if it is tolerated. Adults with recurrent bacterial pneumonias (>2 episodes) may benefit from prophylactic oral antibiotics (penicillin, TMP/SMX, or ampicillin).

Nosocomial bacterial pneumonia in ARC/AIDS is a more difficult problem. Nosocomial bacterial pneumonias account for 10-15% of all bacterial pneumonias in ARC/AIDS. As in the normal population, nosocomial pneumonias in AIDS are more likely to be caused by gram negative organisms. In patients with AIDS, nosocomial pneumonias have a 60% mortality and are frequently unsuspected and inadequately treated. Hospitalized patients should be watched vigilantly for nosocomial pneumonias and treated early with empiric therapy to cover gram negative organisms. Aminoglycosides and second or third generation cephalosporins or extended spectrum penicillins provide adequate initial therapy until culture results are known.

Bacteremia in ARC/AIDS

Patients with AIDS also have increased rates of bacteremia associated with catheter-related infections, cellulitis, phlebitis, and spontaneous bacteremias. Interestingly, community-acquired bacteremias in HIV-positive patients are frequently not suspected and often present with minimal clinical signs and symptoms. Twenty-three percent of bacteremic AIDS patients presenting to San Francisco General Hospital had completely normal vital signs. Only 57% of these patients were tachycardiac or febrile while they were bacteremic. The most frequent bacteremic isolates include *Staphylococcus aureus, S. pneumoniae, E. coli, H. influenzae, Salmonella* species and *Staphylococcus epidermidis. Staphylococcus epidermidis* accounts for 25% of bacteremic isolates associated with long term venous catheters. Hickman or Broviac catheters may be more likely to become infected in HIV-positive patients. Of catheter-related bacteremias in HIV-positive patients; those which are community acquired are much more likely to be due to gram positive organisms and are much more amenable to treatment. Nosocomial catheter-related bacteremias are more commonly gram negative and associated with a 50-70% mortality.

A high index of suspicion is therefore necessary regarding bacteremia in HIV-infected patients, because of the prevalence of both community acquired and nosocomial blood stream infections. Blood cultures should be obtained in HIV-positive patients who present with skin, soft tissue, pulmonary, and catheter infections, and also in febrile or ill appearing patients without an obvious source of infection. Empiric antibiotic coverage should be given for 48-72 hours pending culture results. Antibiotics such as vancomycin, nafcillin, oxacillin or cefazolin provide adequate gram positive coverage for catheter-related infections with an aminoglycoside or second or third generation cephalosporin for gram negative coverage.

Bacterial Diarrhea in ARC/AIDS

Diarrhea is a frequent problem in HIV-positive patients and has numerous potential etiologies. Bacterial diarrheal pathogens are also more common in HIV-infected patients compared to the rest of the population. In such patients, *Salmonella*, *Shigella*, and *Campylobacter* species may present as a spectrum of illness from asymptomatic infection to mild diarrhea with or without proctitis to severe toxic systemic involvement with bacteremia. Non-typhoidal *Salmonella* species are a common cause of enteric fever which in the normal host is usually self limited, and not always treated. Infection due to *Salmonella* species is controlled by cell-mediated immunity and so in HIV-infected patients, disseminated salmonellosis is 20 times more frequent than in controls. HIV-infected patients with *Salmonella* infections are also frequently bacteremic (40-50%), and may have severe clinical complications and prolonged disease. *Salmonella* may be cultured not only from the stool and blood, but from the urine, spleen, bone marrow, and even intracranial and intra-abdominal abscesses. Recurrences and relapses are common despite appropriate antibiotic therapy.

Shigellosis is also increased in frequency. *Shigella* species are the most common bacterial diarrheal pathogens in HIV-positive patients but disseminate less commonly than *Salmonella* and *Shigella* bacteremia is rare. *Shigella* infection typically presents with abdominal cramping, fever, bloody diarrhea, and positive fecal leukocytes. Rectal and colonic mucosa is frequently ulcerated and friable.

Campylobacter, a motile-curved gram negative rod is an extremely common cause of bacterial diarrhea in the general population and in HIV-positive patients. *Campylobacter* infection causes acute toxic diarrhea and fever, cramping, profuse watery stools. HIV-infected patients again may present with bacteremia, or atypical manifestations such as cholecystitis. Chronic or relapsing infections are described in HIV-positive patients, as are persistent infections due to drug resistant isolates.

Evaluation of diarrhea in HIV-infected patients should include stool examination for blood and leukocytes, acid-fast smear, ova and parasites, and culture. If patients are toxic or the diarrhea is severe or prolonged, blood cultures should be obtained. The presence of fever, fecal leukocytes, and blood suggest a bacterial origin. Co-infection can and does occur and giardiasis, cryptosporidiosis, CMV infection, amoebic dysentery, and gonorrhea should always be considered.

Bacterial diarrhea should always be treated in HIV-positive patients. *Salmonella*, *Shigella*, and *Campylobacter* infections can be empirically treated with quinolones (ciprofloxacin, norfloxacin) pending sensitivities. The standard recommendation is that diarrhea should be treated for 7-14 days and bacteremia should be treated at least 14 days, though longer therapy may be necessary, particularly if relapses occur. These infections may be acquired sexually, from ingestion of raw milk, contaminated or untreated water, or from infected animals (turtles and poultry), and patients at high risk should be advised accordingly.

Syphilis in ARC/AIDS

Syphilis is yet another problematic bacterial infection in HIV-positive patients. The annual rate of syphilis in the U.S. is increasing significantly and much of this rise is related to the prevalence of syphilis in HIV-positive patients. Syphilis, "The Great Imitator," maybe even more difficult to diagnose and manage in HIV-positive patients. Atypical manifestations of syphilis, including rapid progression from secondary to tertiary disease (even with standard therapy), relapses without re-exposure (despite appropriate therapy), active disease with negative serology, and asymptomatic neurosyphilis, are being described in patients with HIV infection. All HIV-positive patients should have a screening test for syphilis (VDRL), and a specific treponemal test if the VDRL is positive. The optimal treatment regimen is not clear. Since HIV-positive patients may progress rapidly and may have asymptomatic neurosyphilis, the most conservative recommendation is to do spinal taps on all HIV-positive patients with positive serology. Those with laboratory evidence of neurosyphilis should receive 12-24 million units of penicillin intravenously every day for 10 days. Those HIV-positive patients without cerebrospinal fluid abnormalities could be treated with 2.4 million units intramuscular benzathine penicillin G once a week, for 3 weeks. All HIV-infected patients being treated for syphilis should be watched closely to evaluate serologic responses and to observe for relapses. Repeat therapy or more intensive IV therapy may be necessary if serology fails to return to normal. A great deal remains unknown about the natural history and optimal therapy for syphilis in HIV and so caution and conservative therapy may be the safest recommendation until more information is available.

In summary, HIV-positive patients are at risk for a number of serious bacterial infections. Bacterial pneumonias, bacterial diarrhea, and syphilis are all increased in HIV-infected patients. These bacterial infections are associated with increased rates of bacteremia and increased relapses in HIV-positive patients. HIV-positive patients may present with a paucity of clinical signs and symptoms and so clinicians must keep a high index of suspicion regarding bacteria as well as other opportunistic pathogens. Bacterial infections in HIV-infected patients in general have a favorable prognosis and so early diagnosis and appropriate therapy is the key.

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The Author

VICTORIA FRASER, M.D.

Dr. Fraser is a member of the Division of Infectious Diseases at Washington University School of Medicine and is associated with Washington University's AIDS Clinical Trials Unit.

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SPECIAL SERIES: Chronic Disease Reports

Cardiovascular Disease in Missouri: Mortality, Hospital Discharges and Risk Factors

Ross C. Brownson, Ph.D.
Columbia, Missouri
Mark Van Tuinen, Ph.D.
Jefferson City, Missouri
and Carol A. Smith, M.S.P.H.
Columbia, Missouri

The authors discuss the magnitude of cardiovascular disease in terms of mortality and medical care, while showing that significant proportions of Missourians are at risk of developing cardiovascular disease.

Although cardiovascular disease mortality has declined nearly 40% over the past 20 years,[1] it remains the leading cause of death, disability, and health care expenditures in Missouri and nationwide.[2] The category of cardiovascular disease includes ischemic heart disease, cerebrovascular disease (stroke), hypertension, peripheral vascular disease, and rheumatic heart disease.[1] It is estimated that more than one in four Americans suffer some form of cardiovascular disease.[3] The American Heart Association calculates that cardiovascular disease costs more than $88 billion annually.[3]

The underlying pathologic condition in most cases of cardiovascular disease is atherosclerosis, which is a complex process that leads to plaque formation.[1] The exact biological mechanisms by which atherogenesis occurs are not completely understood. However, the major risk factors for cardiovascular disease are well identified.[1] These risk factors include cigarette smoking, hypertension, high blood cholesterol, physical inactivity, obesity, diabetes, family history, and age.[1-3]

To examine the magnitude and risks of cardiovascular disease in Missouri, we conducted an analysis of mortality data, hospital discharge records, and behavioral risk factor prevalence data.

Methods

Mortality Analyses. Data from the Missouri Center for Health Statistics[4] were used to examine the magnitude of cardiovascular disease in 1988. The category of all cardiovascular diseases was comprised of *International Classification of Diseases, 9th Revision (ICD-9)*[5] codes 390-448. Among the diagnoses in this category were ischemic heart disease *(ICD-9* 410-414), cerebrovascular disease *(ICD-9* 430-438), hypertension *(ICD-9* 401-404), and rheumatic fever and rheumatic heart disease *(ICD-9* 390-398).

Hospital Discharge Analyses. Hospital discharge data were collected by the Missouri Department of Health, in conjunction with the Missouri Hospital Association. Hospital discharge records from 1987, which were the latest available and represent 93% of all discharges, were used to determine the impact of cardiovascular disease on the health care system in Missouri.

Table 1
Deaths and Hospital Discharges due to Cardiovascular Disease, Missouri

	Deaths — 1988		Hospital Discharges — 1987		
Category	No.	%Less than Age 65	No.	%Less than Age 65	Mean LOS*
All Diagnoses	50,619	15	653,695	65	7.2
All Cardiovascular Diagnoses	23,211	15	97,363	35	8.0
Ischemic Heart Disease	12,626	15	37,159	45	7.2
Cerebrovascular Disease	3,607	11	19,011	22	8.7
Hypertension	645	22	3,141	55	6.3
Rheumatic Fever and Rheumatic Heart Disease	130	32	587	58	10.8
Other Cardiovascular	6,203		37,465	30	8.4

***Mean length of stay in days.**

Behavioral Risk Factor Data. Since 1985, the Missouri Department of Health has been collecting data on the prevalence of behavioral risk factors such as smoking, hypertension, high blood cholesterol, physical inactivity, and obesity.[6,7] This surveillance system, sponsored by the Centers for Disease Control, uses a random digit dialing technique[8] to select adult Missourians, age 18 years and older, for telephone interviews. The interviews are conducted monthly, and a total of 1,356 interviews was completed in 1988.

Results

In Missouri, cardiovascular disease accounted for 23,211 deaths in 1988, which was 46% of all deaths (Table 1). Ischemic heart disease was listed as the principal cause of death in slightly over half of all deaths due to cardiovascular disease. Although only 15% of those who died from ischemic heart disease were under the age of 65, nearly half (45%) of those discharged from a hospital with a principal diagnosis of ischemic heart disease were under 65 years.

Stroke and associated forms of cerebrovascular disease were responsible for 3,607 deaths in 1988, making it the third leading cause of death. The associated length of stay for stroke was 8.7 days, which was the second longest of the stays due to various types of cardiovascular disease.

Hypertension contributed to less than 3% of the total cardiovascular deaths and discharges. It is noteworthy, however, that the second highest proportion of hospitalizations for those under 65 years (55%) was due to hypertension.

Children and young adults are at a greater risk for rheumatic fever and rheumatic heart disease than for other types of cardiovascular disease. This is reflected in the relatively high frequency of deaths and hospitalizations among individuals under 65 years (32% and 58%, respectively). The average length of stay of 10.7 days for rheumatic fever and rheumatic heart disease was the longest of the stays for the cardiovascular diseases studied.

Figure 1 presents information on several cardiovascular disease risk factors. Fifty-nine percent of adult Missourians reported being physically inactive in 1988. Fifty-five percent of the population reported never having had their cholesterol checked. Approximately one-fourth (27%) of the respondents reported height and weight figures corresponding to 120% above ideal body weight. The overall frequency of current smokers was 26%, which included slightly more male than female smokers (27% versus 25%) and the highest smoking rate among nonwhite males (31%). Twenty percent of the population was hypertensive according to the definition we used, which is the current definition of the National Heart, Lung, and Blood Institute.[7,9]

Discussion

Our findings demonstrate the magnitude of cardiovascular disease in terms of mortality and medical care. They also show that significant proportions of Missourians are at risk of developing cardiovascular disease.

We should note that our behavioral risk factor data are based on self-report, telephone interviews and may underestimate the true prevalence of these

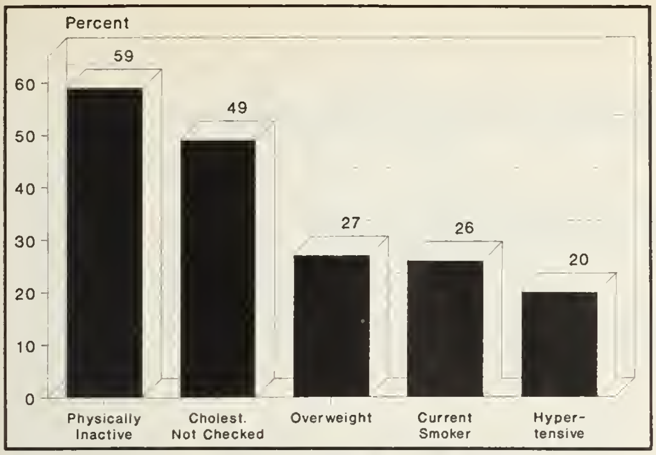

Fig. 1. Estimated prevalence of five risk factors for cardiovascular disease, Missouri, 1988. Definitions of risk factors are provided in reference 7.

risk factors. For example, our study found a 20% population prevalence of hypertension, which is considerably lower than national estimates of up to 30%.[10]

It has been suggested that cardiovascular disease mortality could be reduced by 60% through continued reduction of established personal risks and habits such as elevated serum cholesterol, hypertension, and cigarette smoking.[11]

Reducing the burden of cardiovascular disease is an important priority of the public health system, as evidenced in year 2000 objectives at both the state and national levels.[12,13] Physicians and other health care professionals are a respected source of information on preventive medicine and will play a key role in achieving year 2000 health objectives. An estimated 80% of the population sees a physician during a given year and 54% of all encounters are with primary care physicians.[13] These patient-physician encounters are ideal opportunities for primary (e.g., smoking cessation, counseling for physical activity) and secondary (e.g., hypertension and cholesterol screening) prevention of cardiovascular disease.

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The Authors

ROSS C. BROWNSON, Ph.D.
MARK VAN TUINEN, Ph.D.
CAROL A. SMITH, M.S.P.H.

Dr. Brownson, Dr. Van Tuinen and Ms. Smith are all affiliated with the Missouri Department of Health. Dr. Brownson is the director of the Division of Chronic Disease Prevention and Health Promotion, and Ms. Smith serves as assistant director. Dr. Van Tuinen is the chief of the Bureau of Health Services Statistics.

Reprints

Ross C. Brownson, Ph.D.
Division of Chronic Disease Prevention
and Health Promotion,
Missouri Department of Health
201 Business Loop 70 West
Columbia, Missouri 65203

Computed Tomography Demonstration of Acute Thrombosis of A Portal Vein Aneurysm

Bradley K. Baker, M.D., and James A. Nepute, M.D.
St. Louis, Missouri

The author presents a case of surgically proven acute thrombosis of a portal vein aneurysm, a rare occurrence, demonstrated by computed tomography.

A case of surgically proven acute thrombosis of a portal vein aneurysm, which was demonstrated by computed tomography, is reported. Aneurysm of the portal vein and its tributaries is rare. Comparison with previous cases and a brief review of the etiology, symptoms and treatment of portal vein aneurysm are presented.

Case Report

A previously healthy 34-year-old woman had developed upper abdominal and back pain one week prior to admission. The pain was associated with severe postprandial nausea, but not vomiting. After an outpatient visit, at which time laboratory study findings were unremarkable, she underwent an ultrasound examination. This examination revealed a mass with a complex echo pattern in the gallbladder fossa, and the patient was admitted for further evaluation (Fig 1).

On admission to the hospital, the patient was noted to have an ill-defined fullness in the right upper quadrant that was tender to palpation. Her laboratory test results were normal except for minimally elevated bilirubin. Computed tomography of the abdomen showed a right upper quadrant mass in the region of the porta hepatis which measured 5 cm x 8 cm x 8 cm, and extended to the confluence of the splenic and mesenteric veins. Minimal bile duct dilatation, minimal ascites and moderate splenomegaly were noted on this abdominal scan (Figs 2, 3, 4). The gallbladder was not visualized. The patient underwent surgical exploration, and a thrombosed portal vein aneurysm was discovered. The thrombosis extended into the superior mesenteric vein and the entire splenic vein. The mesenteric vein pressures distal to the thrombosis were elevated.

The aneurysm and spleen were resected and a mesocaval shunt procedure was performed. Pathological examination of the surgical specimen confirmed thrombosis of a portal vein aneurysm. The patient did well postoperatively and was discharged seven days after admission.

Discussion

Aneurysms of the portal vein and its tributaries are rare.[1-9] A review of the world literature by Andoh et al[1] revealed 18 cases of portal vein aneurysm in the world literature. Wise[2] reported 24 cases, including

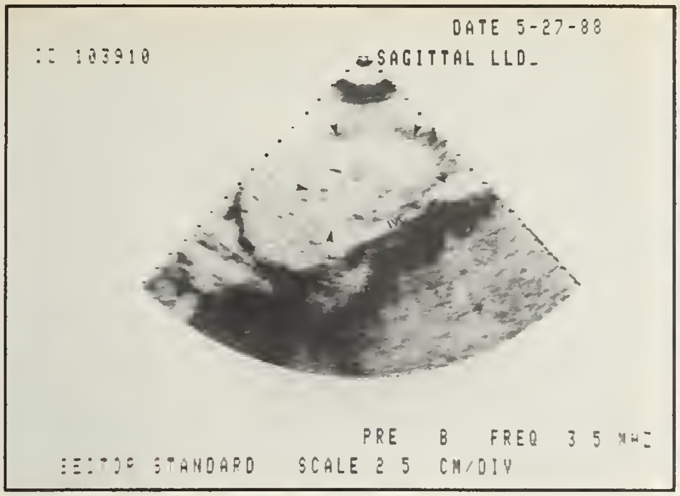

Fig. 1. Sagittal ultrasound image through the region of the gallbladder fossa showing a complex mass (▲) anterior to the inferior vena cava (IVC).

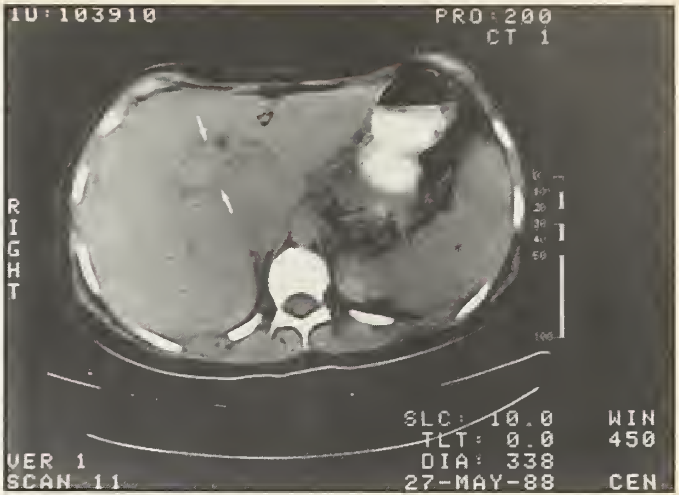

Fig. 2. CT image showing thrombus in the intrahepatic portion of the portal vein (↑). Note moderate splenomegaly (*).

aneurysms of the portal venous tributaries. A portal vein aneurysm with thrombosis has been described only once previously by Thomas[3] in 1967. This thrombosed aneurysm ruptured spontaneously and appeared as an upper abdominal mass on radiographic examination. Computed tomographic demonstration of acute thrombosis of a superior mesenteric vein aneurysm[2] has been described, but there has been no report of CT diagnosis of thrombosis of a portal vein aneurysm.

The first report of the ultrasound appearance of a portal vein aneurysm described an anechoic structure that could be mistaken for a cyst if it is within the liver.[4] In our case, the scan showed a mass with a complex echo pattern in the right upper quadrant. Boyez[5] predicted that if thrombosis occurred, some difficulty could arise in interpretation of the ultrasound image. This proved true in our case, as this mass was interpreted to be a tumor prior to surgery.

The first report of a portal vein aneurysm on CT scan in 1980 depicted it as a low density mass in the porta hepatis, which was enhanced with the administration of contrast medium.[6] In a previously described case of thrombosis of the superior mesenteric vein, the CT scan showed rim enhancement of the vessel wall around the thrombus, along with a mass at the confluence of the splenic vein and superior mesenteric vein.[2] In our case the vessel wall was minimally enhanced, and a large, somewhat hyperdense mass was present, representing thrombus in the portal vein, extending into the confluence of the splenic vein and superior mesenteric vein. The superior mesenteric vein was not visualized as a distinct structure in this case, and the splenic vein was prominent but showed no evidence of a filling defect. Dynamic scanning was not attempted, but may have shown more enhancement of the vessel wall. The gallbladder was compressed by the mass and was not visualized. Enhancement of the vessel wall is thought to be due to flow within the vasa vasorum of the vessel wall, rather than flow around the thrombus.[2]

The causes of portal vein aneurysm have been extensively discussed. They include a congenitally weakened vessel, portal hypertension, pancreatitis with partial digestion of the vessel wall, and persistence of the right vitelline vein with diverticulum formation from this vein.[7] One case of portal vein aneurysm in a patient with agnogenic myeloid metaplasia has been reported.[8] The signs and symptoms of portal vein aneurysm include compression of the duodenum or bile duct,[5] crampy abdominal pain, portal hypertension, and GI bleeding.[2,3,4,9] In this particular case, the patient not only had crampy abdominal pain but also back pain and postprandial nausea. The patient previously reported with portal venous thrombosis experienced excruciating abdominal pain and shock.[3] The patient who was reported to have thrombosis of the superior mesenteric vein aneurysm experienced similar symptoms as our patient but did not have venous congestion at the time of surgery.[2]

To avoid thrombosis in the aneurysm, as well as to avoid rupture or portal hypertension, a direct portacaval shunt is recommended for symptomatic patients. For asymptomatic patients, frequent follow-up examinations, including ultrasound, are suggested.[5]

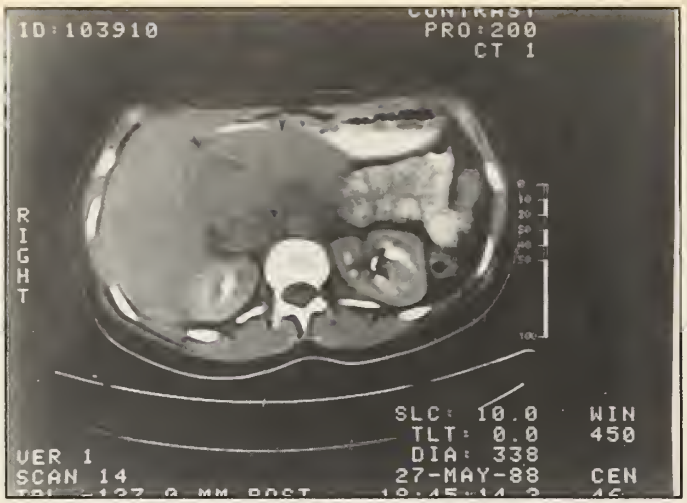

Fig. 3. CT image showing thrombosed portal vein aneurysm (▲).

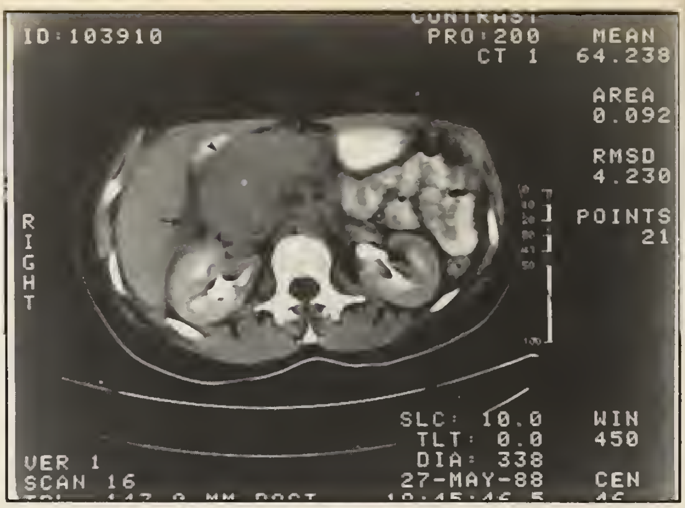

Fig. 4. CT image showing thrombosed portal vein aneurysm (▲) extending to the superior mesenteric vein. Note small amount of peritoneal fluid (‡).

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The Authors

BRADLEY K. BAKER, M.D.
JAMES A. NEPUTE, M.D.

Dr. Baker is a radiologist in the Department of Radiology at St. Louis University Medical Center, St. Louis, Missouri, and Dr. Nepute is a radiologist in the Department of Radiology at St. John's Mercy Medical Center, St. Louis, Missouri.

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James A. Nepute, M.D.
Department of Radiology
St. John's Mercy Medical Center
615 South New Ballas
St. Louis, Missouri 63141

Severe Bradycardia and Hypotension Following Intraocular Acetylcholine
in a Patient Who Previously Tolerated the Medication

John C. Hagan, III, M.D., F.A.C.S.
North Kansas City, Missouri

Clinical problems with acetylcholine are unusual. The author's experience in the following case suggests that the mechanism of the observed side effects may be something other than drug idiosyncrasy, and stresses the importance of reporting side effects of medications.

Systemic side effects, hypotension and bradycardia, following intraocular administration of acetylcholine were first reported by Rogney and Weisman.[1] Since then, four additional cases[2-4] of similar systemic effects have been reported, as well as a single case of bronchospasm[5] associated with hypertension and increased pulse rate. The National Registry of Drug Induced Ocular Side Effects has collected three other cases of hypotension and bradycardia, and a single case of cardiac arrest occurring immediately after intraocular administration of acetylcholine. (Personal communication, Martha Meyer, Associate Director, May 30, 1989).

Previous reviews of the pathophysiology of these side effects have postulated an idiosyncratic drug reaction or systemic absorption as the mechanism of these complications.[2,4] I report a case of severe bradycardia and hypotension that occurred immediately after intraocular acetylcholine injection in a patient who had previously received intraocular acetylcholine without incident. Previous tolerance of intraocular acetylcholine in a patient who later had side effects has not been reported. This case would suggest that systemic absorption rather than drug idiosyncrasy is the likely pathophysiologic mechanism.

Case Report

A 94-year-old white woman was admitted to a hospital on August 31, 1987. She had bilateral cataracts and visual acuity of 20/80 in each eye. Preoperatively she was evaluated by an internist, who made the diagnosis of atherosclerotic heart disease with remote myocardial infarction, diabetes mellitus and cerebrovascular insufficiency. He felt she was in excellent health for her age. Her pulse was 72, respirations 16, blood pressure 180/80. The CBC, electrolytes and chest x-ray films were interpreted as normal. The EKG was interpreted as normal sinus rhythm, non-specific ST-T wave changes and possible left ventricular hypertrophy. Her medications were transdermal nitroglycerine, docusate sodium/casanthranol (Peri-Colace), dipyridamole, isoproterenol (Isuprel), digoxin and chlorpropamide.

The next day, following balloon eye compression and dilation of the left pupil with 1% tropicamide, 1% cyclopentolate, 2.5% phenylephrine and flurbiprofen, the patient received a peribulbar injection of 0.75% bupivacaine and 1% lidocaine in a 1:1 mixture with a spreading enzyme. A total of 6 mL was used. She received 80 mg of thiopental intravenously while the peribulbar block was given. She was monitored by an anesthetist during the entire procedure. Monitoring included precordial chest leads and continuous blood gas measurement.

A standard extracapsular cataract extraction and insertion of a posterior chamber lens was carried out without incident. The degree of akinesia and ocular anesthesia was excellent. The intraocular irrigation fluid was BSS Plus, to which 0.5 mL of 1:1000 adrenaline was added. Excess irrigation fluid was removed from the field with a Hagan surface suction instrument.[6] Freshly mixed acetylcholine (Miochol) was injected after the implant was inserted to stimulate miosis. About 1 mL was used. There were no changes in the EKG nor in the vital signs throughout the procedure. The patient made an uneventful recovery and her vision was 20/25 in the left eye.

On February 28, 1989, the same patient, now 96 years old, elected to undergo surgery on the right eye, which was reduced to finger counting vision due to a dense cataract. Her interval health history was negative. Her medications were the same, with the exception of the chlorpropamide, which had been discontinued, and atenolol and 39 units of insulin (Humulin), which had been added to the regimen. She was evaluated by an anesthesiologist, who found no contraindication to surgery. Chest radiograph, CBC and electrolytes were normal. Her blood pressure was 140/70, pulse 72, respirations 20. An EKG, done the day before surgery, was interpreted as normal sinus rhythm with first degree AV block, and ST-T wave abnormalities. On the day of surgery, however, the EKG showed no AV block.

The peribulbar block and cataract/implant surgery were identical to her first procedure. At the beginning of the operation, she received 0.5 mg of midazolam intravenously. No changes were noted in her vital signs after the injection. Twenty minutes later, after nucleus and cortical removal and insertion of a posterior chamber intraocular lens, 1 mL of fresh acetylcholine was injected intraocularly for miosis. Within a minute of injection, the patient had complete heart block with development of a ventricular rhythm of less than 20 beats per minute and a drop in blood pressure. The patient was immediately given 0.6 mg of atropine intravenously, and her pulse rate rose to 66 beats/minute with return of a normal sinus rhythm. Blood pressure returned to normal, and the operation was completed without further problems. The patient was discharged after several hours' observation in the outpatient area. She has had no further problems with her heart rate or general health and has 20/30 vision in her right eye.

Discussion

Acetylcholine is a direct-acting parasympathomimetic chemical neurotransmitter. Systemic actions of acetylcholine include vasodilation, bradycardia, decreased myocardial contractile force and increased vagal tone.[7] Atropine abolishes acetylcholine's muscarinic actions; its nicotinic actions are blocked by tubocurarine chloride. Acetylcholine is rapidly destroyed by cholinesterase.

Amsler and Verrey[8] in 1949 demonstrated the rapid miotic action of intraocular acetylcholine and suggested its use in cataract surgery. The drug is commerically available (Miochol) in a 1:100 concentration of acetylcholine chloride. A volume of 0.5 to 2 mL is recommended for miosis.

An additional action of intraocular acetylcholine[9] is reduction of postoperative intraocular pressure, but the effect lasts only three to six hours.

Intraocular acetylcholine is a relatively safe medication. Only 11 adverse reactions have been reported in a clinical usage that exceeds several million unit doses. A review of these 11 cases shows no condition that would identify those at risk for side effects. In those case reports that describe a preoperative EKG, the study was normal or showed only minor abnormalities. No patient had clinically significant bradycardia or EKG condition preoperatively.

Our patient had previously received acetylcholine intraocularly without any systemic or EKG changes. The second time this drug was used intraocularly, severe hypotension and third degree heart block occurred. During the 18-month interval between procedures, there was no significant change in her health status. She had changed from an oral diabetic medication to injectable insulin, and she had begun taking atenolol, a beta-selective beta-adrenergic receptor blocking agent for control of hypertension. This medication might possibly account for the mild first degree heart block found preoperatively on EKG. This change was considered clinically insignificant by the patient's personal physician and the anesthesiologist. The EKG on the day of surgery was normal, and after discharge from the hospital, the patient had no further conduction disturbances. The use of oral and topical beta blockers has increased dramatically in recent years, yet, there has not been an accompanying increase in reports of systemic side effects of intraocular acetylcholine. It is unlikely that the atenolol predisposed this patient to the problems encountered.

This case report suggests the mechanism of the observed complications is not drug idiosyncrasy but rather systemic absorption, with perhaps increased myocardial sensitivity to the medication.

Why systemic absorption was greater in the second eye or why sensitivity of the myocardium increased cannot be determined from this case report. A review of the literature of reported complications of intraocular acetylcholine provides no insight into identifying patients predisposed to having complications. A serum cholinesterase level was not measured after the adverse reaction. Although there is no reason to suspect low activity, the value would have been of interest.

Clinical problems with acetylcholine are so unusual that they cannot be studied in a prospective, controlled manner. Therefore, case reports of side effects are important in determining the safety of the medication. This is particularly important because there is an alternative medication available. Carbacol (Miostat) may be just as effective as acetylcholine as a miotic, but is longer lasting and more effective in controlling postoperative pressure increases.[10] Physicians are urged to report side effects of these two medications to the National Registry.

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The Author

JOHN C. HAGAN, III, M.D.

Dr. Hagan is the director of the Midwest Eye Institute of Kansas City, Inc. and Vice-Chairman of the Department of Surgery at North Kansas City Hospital.

Reprints

John C. Hagan, III, M.D.
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April

3 - 5 **Transesophageal Echocardiography Course** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: Kathleen Habermehl, St. Louis University School of Medicine, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8897.

5 - 6 **17th Annual Symposium on Obstetrics & Gynecology** — Location: Washington University Medical Center, St. Louis, MO. Contact: Cathy Caruso, Continuing Medical Education, Washington University School of Medicine, Box 8063, 660 South Euclid, St. Louis, MO 63110. 314/362-6893.

5 - 6 **Current Management in Critical Care** — Location: Ritz Carlton Hotel, Kansas City, MO. Contact: Linda F. Smutz, Kansas City Southwest Clinical Society, 7920 Ward Parkway, Suite 205, Kansas City, MO 64114. 816/523-3383.

5 - 7 **Advances in Ophthalmology** — Location: Embassy Suites Hotel, Country Club Plaza, Kansas City, MO. Contact: Bernice Jackson, University of Kansas Medical Center, Office of Continuing Education, Rainbow and Olathe Blvds., Kansas City, KS 66103. 913/588-4490.

6 - 8 **Microsurgery of the Lumbar and Cervical Spine** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: Anita Herbst, St. Louis University School of Medicine, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8167.

11 **Orthopedic Trauma Symposium** — Location: Von Gontard Conference Center, St. John's Mercy Medical Center, St. Louis, MO. Contact: Judith L. O'Guin, Corporate Meeting/Special Events Planner, St. John's Mercy Medical Center, 615 South New Ballas Road, St. Louis, MO 63141-8221. 314/569-6290.

18 **New Imaging Modalities in Cancer Diagnosis** — Location: Jewish Hospital, St. Louis, MO. Contact: Alan P. Lyss, M.D., Jewish Hospital, 216 E. Kingshighway, P.O. Box 14109, St. Louis, MO 63178. 314/454-7000.

18 - 19 **15th Annual Family Practice Symposium** — Location: Ritz-Carlton Hotel, Kansas City, MO. Contact: Bernice Jackson, University of Kansas Medical Center, Office of Continuing Education, Rainbow and Olathe Blvds., Kansas City, KS 66103. 913/588-4490.

18 - 22 **Sixth Annual Family Medicine Review** — Location: Stouffer Hotel, Austin, TX. Contact: Charlene E. Lee, Department of Continuing Medical Education, Scott and White, 2401 South 31st Street, Temple, TX 76508. 817/774-4073.

19 - 20 **The 21st Annual Matt Weis Symposium in OB/GYN** — Location: Breckenridge Frontenac Hotel, St. Louis, MO. Contact: Sandra Williams, St. John's Mercy Medical Center, 615 South New Ballas Road, St. Louis, MO 63141. 314/569-6880.

21 **New Directions in Cardiology: Update in Invasive & Non-Invasive Therapies** — Location: Hyatt Regency Hotel at Union Station, St. Louis, MO. Contact: Anita Herbst, St. Louis University School of Medicine, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8167.

21 **1990 Enhanced Arts of Back Care** — Location: Fountain Plaza Room, Cox Medical Center North, Springfield, MO. Contact: Mary Kimberling, P.T., Ozarks Medical Center, P.O. Box 1007, West Plains, MO 65775. 417/257-6716.

23 - 24 **Advanced Cardiac Life Support (ACLS) Provider Course** — Location: Texas A&M University, Temple, TX. Contact: Charlene E. Lee, Office of Continuing Medical Education, Scott and White, 2401 S. 31st Street, Temple, TX 76508. 817/774-3197.

23 - 27 **Medicolegal Death Investigator Training Course** — Location: St. Louis University Learning Resources Center, St. Louis, MO. Contact: Mary Fran Ernst, St. Louis University School of Medicine, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/725-1884.

23 - May 4 **31st Annual Postgraduate Institute for Pathologists in Clinical Cytopathology — In-Residency Course B** — Location: Johns Hopkins Medical Institutions, Baltimore, MD. Contact: John K. Frost, M.D., or Ms. Betty Ann Remley, 111 Pathology Bldg., The Johns Hopkins Hospital, Baltimore, MD 21205. 301/955-8594.

27 - 28 **Life-Style Symposium: Prescribing for and Obtaining Compliance from Your High Cardiovascular Risk Patients with Dyslipidemia** – Location: Westin Crown Center Hotel, Kansas City, MO. Contact: Bernice Jackson, University of Kansas Medical Center, Office of Continuing Education, Rainbow and Olathe Blvds., Kansas City, KS 66103. 913/588-4490.

27 - 29 **40th Annual Postgraduate Symposium on Anesthesiology** – Location: Ritz-Carlton Hotel, Kansas City, MO. Contact: Bernice Jackson, University of Kansas Medical Center, Office of Continuing Education, Rainbow and Olathe Blvds., Kansas City, KS 66103. 913/588-4490.

27 - 29 **Effective Management of Abusable Medications** – Location: CME Auditoriaum, MA217, University of Missouri School of Medicine, Columbia, MO. Contact: Barry Kling, Office of Continuing Education, MA215 Health Sciences Center, Columbia, MO 65212. 314/882-4105

28 **Lyme Disease In The Midwest** – Location: St. Louis University Frost Campus, Kelly Auditorium, St. Louis, MO. Contact: Dorothy Feir, Ph.D., Continuing Medical Education, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/658-3907.

May

2 **Update in Family Practice** – Location: Von Gontard Conference Center, St. John's Mercy Medical Center, St. Louis, MO. Contact: Judith L. O'Guin, Corporate Meeting/ Special Events Planner, St. John's Mercy Medical Center, 615 South New Ballas Road, St. Louis, MO 63141-8221. 314/569-6930.

2 - 5 **16th Annual Meeting Federated Ambulatory Surgery Association – Ambulatory Surgery '90: Focus on Excellence** – Location: Anaheim Marriott, Anaheim, CA. Contact: Gerald G. Pousho, M.D., FASA, 700 N. Fairfax St., #520, Alexandria, VA 22314. 703/836-8808.

3 - 5 **Cardiovascular Medicine Legal Environment: Medicine's Response** – Location: Don CeSar Beach Resort, St. Petersburg, Florida. Contact: Anita Herbst, St. Louis University School of Medicine, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8167.

3 - 5 **Pediatric Advanced Cardiac & Trauma Support for Life and Pediatric Advanced Life Support (PACTS/PALS)** – Location: Cardinal Glennon Children's Hospital, St. Louis, MO. Contact: Elaine Thompson, Continuing Medical Education, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-5657.

4 - 6 **Cardiology Update** – Location: Lodge of the Four Seasons, Lake Ozark, MO. Contact: Barry Kling, University of Missouri School of Medicine, Office of Continuing Education, MA215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

8 - 10 **Introduction to Doppler Echocardiography** – Location: St. Louis University Medical Center, St. Louis, MO. Contact: Kathleen Habermehl, St. Louis University School of Medicine, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8897.

10 - 14 **1990 ASIM Leadership Development Conference: "Starting Off on the Right Track"** – Location: Hyatt Regency St. Louis Union Station, St. Louis, MO. Contact: Dana Jennings, American Society of Internal Medicine, 1101 Vermont Avenue, NW, Suite 500, Washington, D.C. 20005-3457. 202/289-1700.

11 **Toxicology Update 1990** – Location: Hyatt Regency St. Louis Union Station, St. Louis, MO. Contact: Bob Jaeger, Continuing Medical Education, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/772-8300.

11 **Third Annual Trauma Symposium: Care of the Multiple Trauma Patient** – Location: Holiday Inn, Clayton, MO. Contact: SLUMC Staff Development, Continuing Medical Education, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8095.

11 - 12 **Low Back & Sciatic Pain: Evaluation & Treatment** – Location: Washington University Medical Center, St. Louis, MO. Contact: Cathy Caruso, Continuing Medical Education, Washington University School of Medicine, Box 8063, 660 S. Euclid, St. Louis, MO 63110. 314/362-6893.

11 - 13 **Allergy For the Clinician: Practical Solutions To Everyday Problems** – Location: Ritz-Carlton Hotel, Clayton, MO. Contact: Anita Herbst, Continuing Medical Education, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8167.

16 **Hematopoietins, Biologics, and Marrow Transplantation in the Treatment of Common Solid Tumors** – Location: Jewish Hospital, St. Louis, MO. Contact: Alan P. Lyss, M.D., Jewish Hospital, 216 S. Kingshighway, P.O. Box 14109, St. Louis, MO 63178. 314/454-7000.

18 **Kansas Medicine: Ten Years Later** – Location: Hyatt Regency Hotel, Kansas City, MO. Contact: Bernice Jackson, University of Kansas Medical Center, Office of Continuing Education, Rainbow and Olathe Blvds., Kansas City, KS 66103. 913/588-4490.

18 - 19 **30th Annual Washington University Eye Alumni Association Meeting** – Location: Washington University Medical Center, St. Louis, MO. Contact: Kathy Ryan, Washington University School of Medicine, Box 8096, 660 S. Euclid Ave., St. Louis, MO 63110. 314/362-5722.

19 **Cholesterol: Practical Aspects of Patient Management** — Location: Adam's Mark Hotel, St. Louis, MO. Contact: Anita Herbst, Continuing Medical Education, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8167.

27 - 31 **19th Annual Scientific Assembly - American College of Emergency Physicians State Chapter of California** — Location: Silverado Country Club, Napa, CA. Contact: CAL/ACEP office, 505 N. Sepulveda Blvd., Suite 12, Manhattan Beach, CA 90266. 213/374-4039 or 1-800-SEK-ACEP.

31 - June 1 **Patent Development** — Location: Stouffer Hotel, St. Louis, MO. Contact: Barry Kling, MU School of Medicine, Office of Continuing Education, MA215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

June

1 **Perinatal Sonography: Clinical Applications For 1990** — Location: St. Mary's Health Center, St. Louis, MO. Contact: Sandy Cobb, Continuing Medical Education, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/768-8730.

1 - 2 **3rd Annual Contact Lens Course** — Location: Washington University Medical Center, St. Louis, MO. Contact: Cathy Caruso, Continuing Medical Education, Washington University School of Medicine, Box 8063, 660 S. Euclid, St. Louis, MO 63110. 314/362-6893.

1 - 2 **Glennon Update in Pediatric Gastroenterology and Pediatric Endocrinology** — Location: Hyatt Regency Hotel, St. Louis, MO. Contact: Mary Hummert, Educational Coordinator, Room 202, Cardinal Glennon Children's Hospital, 1465 S. Grand Blvd., St. Louis, MO 63104. 314/577-5638.

1 - 3 **The Big Four: Obesity, Diabetes Mellitus, Hypertension, Hyperlipidemia** — Location: Holiday Inn Executive Center, Columbia, MO. Contact: Barry Kling, MU School of Medicine, Office of Continuing Education, MA215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

5 - 7 **Introduction to Doppler Echocardiography** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: Kathleen Habermehl, Continuing Medical Education, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8897.

6 - 9 **Facial Rejuvenation** — Location: Ritz-Carlton St. Louis Hotel, St. Louis, MO. Contact: Cathy Caruso, Office of Continuing Medical Education, Washington University School of Medicine, 660 S. Euclid, Box 8063, St. Louis, MO 63110. 1-800-325-9862 or 314/362-6893.

6 - 10 **7th Annual Meeting of the Southern Orthopaedic Association** — Location: Hyatt Regency Hotel, Maui, Hawaii. Contact: Jeanette Stone, Southern Orthopaedic Association, 35 Lakeshore Drive, P.O. Box 190088, Birmingham, AL 35219-0088. 205/945-1848.

7 - 9 **Spine - Microsurgery and Stabilization** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: Anita Herbst, Continuing Medical Education, 1402 S. Grand Blvd., St. Louis, MO 63104. 341/577-8167.

7 - 9 **Frontiers in Endosurgery: Flexible Endoscopy, Laser Surgery, and Endourological Techniques** — Location: Washington University Medical Center, St. Louis, MO. Contact: Cathy Caruso, Continuing Medical Education, Washington University School of Medicine, Box 8063, 660 S. Euclid, St. Louis, MO 63110. 314/362-6893.

8 - 9 **Primary Pediatrics** — Location: Holiday Inn Executive Center, Columbia, MO. Contact: Barry Kling, MU School of Medicine, Office of Continuing Education, MA215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

11 - 16 **Microsurgery of the Brain** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: Anita Herbst, Continuing Medical Education, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8167.

13 - 17 **Issues In Care: Pain** — Location: South Padre Hilton Resort, South Padre Island, TX. Contact: Charlene E. Lee, Office of Continuing Medical Education, Scott and White, 2401 S. 31st Street, Temple, TX 76508. 817/774-4073.

20 **Ovarian Cancer** — Location: Jewish Hospital, St. Louis, MO. Contact: Alan P. Lyss, M.D., Jewish Hospital, 216 S. Kingshighway, P.O. Box 14109, St. Louis, MO 63178. 314/454-7000.

21 - 22 **Pediatric Advanced Life Support (PALS) Provider Course** — Location: Texas A&M University, Temple, TX. Contact: Charlene E. Lee, Office of Continuing Medical Education, Scott and White, 2401 S. 31st Street, Temple, TX 76508. 817/774-3197.

22 - 24 **Annual Professional Meeting of the Missouri Chapter of American College of Surgeons** — Location: Lodge of the Four Seasons, Lake Ozark, MO. Contact: Linda Wheelen, 1926 S. Broadway, Springfield, MO 65807. 417/869-5222.

22 - 24 **1990 Robert E. Owen Graduation Weekend: "Office Medicine and Management in the 1990s"** — Location: Doubletree Hotel and Conference Center, St. Louis, MO. Contact: Marilyn Porter, M.Ed., Metropolitan Medical Center Education Institute, 530 Des Peres Rd., St. Louis, MO 63131. 1-800-888-METRO or 314/966-9285.

28 - 30 **Highlights In Women's Health Care** — Location: Santa Fe, NM. Contact: Charlene E. Lee, Office of Continuing Medical Education, Scott and White, 2401 South 31st Street, Temple, TX 76508. 817/774-4073.

July

10 - 12 **Transesophageal Echocardiography Course** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: Kathleen Habermehl, Continuing Medical Education, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8897.

12 - 13 **Advanced Trauma Life Support (ATLS) Provider Course** — Location: Texas A&M University, Temple, TX. Contact: Charlene E. Lee, Office of Continuing Medical Education, Scott and White, 2401 South 31st Street, Temple, TX 76508. 817/774-3197.

16 - 17 **Advanced Cardiac Life Support (ACLS) Provider Course** — Location: Texas A&M University, Temple, TX. Contact: Charlene E. Lee, Office of Continuing Medical Education, Scott and White, 2401 South 31st Street, Temple, TX 76508. 817/774-3197.

August

3 - 4 **Management of Post-Surgical and Post-Traumatic Complications in Orthopaedics** — Location: Ritz-Carlton Hotel, St. Louis, MO. Contact: Cathy Caruso, Office of Continuing Medical Education, Washington University School of Medicine, 660 S. Euclid, Box 8063, St. Louis, MO 63110. 4314/325-9862.

5 - 10 **Ninth Annual Internal Medicine Review For The Primary Care Physician** — Location: South Padre Hilton Resort, South Padre Island, TX. Contact: Charlene E. Lee, Office of Continuing Medical Education, Scott and White, 2401 South 31st Street, Temple, TX 76508. 817/774-2350.

September

11 - 13 **Introduction To Doppler Echocardiography** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: Kathleen Habermehl, Continuing Medical Education, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8897.

17 - 19 **Memory Function in Aging and Aging Related Changes Symposium** — Location: Clarion Hotel, St. Louis, MO. Contact: Ms. Carolyn Leach, Conference Secretary, VA Medical Center, GRECC(111G-JB), St. Louis, MO 63125. 314/894-6510.

October

5 - 6 **33rd Annual Alumni Weekend** — Location: CME Auditorium, MA217, University of Missouri School of Medicine, Columbia, MO. Contact: Barry Kling, Office of Continuing Education, MA 215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

November

1 - 3 **Clinical Allergy For the Practicing Physician** — Location: Ritz-Carlton Hotel, St. Louis, MO. Contact: Cathy Caruso, Office of Continuing Medical Education, Washington University School of Medicine, 660 S. Euclid, Box 8063, St. Louis, MO 63110. 314/362-6893.

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Medical School News

St. Louis University

A $7.2 million grant has been awarded to **Robert B. Belshe, M.D.**, professor of internal medicine and director of the division of infectious diseases and the Center for Vaccine Development, St. Louis University School of Medicine. The National Institute of Allergy and Infectious Diseases (NIAID) funded a five-year grant to evaluate, develop, and test AIDS vaccines.

The Center for Vaccine Development has been designated by the National Institutes of Health (NIH) as one of five centers in the U.S. to conduct research for AIDS vaccines. Since joining the faculty in July 1989, Dr. Belshe has received more than $12 million from the NIH to study infectious diseases.

Co-investigators involved with the research from St. Louis University School of Medicine's division of infectious diseases include: **Geoffrey J. Gorse, M.D.**, associate professor; **Edwin L. Anderson, M.D.**, professor and pediatric researcher, and **T. Ulf Westblom, M.D.**, assistant professor.

Prior to joining the faculty at St. Louis University School of Medicine, Dr. Belshe was professor of medicine and microbiology and director of infectious diseases at the Center of Vaccine Development at Marshall University in Huntington, W.Va.

Irene T. Schulze, Ph.D., professor of microbiology, St. Louis University School of Medicine, has been awarded a four-year renewal grant totalling $494,748 from the National Institute of Allergy and Infectious Disease. The grant is being used to fund an on-going seven-year study of the influenza virus.

The recipient of numerous grants for her research on viruses, Dr. Schulze is presently on a one-year sabbatical at the University of Oxford in Oxford, England, conducting viral research. This research is funded by an $18,000 senior international fellowship grant from the Fogarty International Center of the National Institutes of Health.

Raj Nakra, M.D., associate professor of psychiatry and human behavior in the division of geriatric psychiatry, St. Louis University School of Medicine, has been awarded a one-year, $72,000 grant to study and evaluate the efficacy of the drug Trental in multi-infarct dementia. This is a new application for this drug which has been proven effective against blood vessel disease.

Dr. Nakra's focus will be to see if the drug reduces mental deterioration due to strokes, improves the loss of memory and increases the ability to perform routine activities in daily living.

Dr. Nakra has been a faculty member since 1982. **Camilo R. Gomez, M.D.**, assistant professor of neurology and director of the stroke resource center, is the associate investigator in the study.

Michael Green, Ph.D., professor of microbiology, St. Louis University School of Medicine, has been awarded a $62,500 grant from the National Science Foundation. The award is being used to fund the first year of a three-year study of the molecular makeup of endoplasmic reticulum (ER).

Dr. Green joined the faculty of St. Louis University School of Medicine in 1975. His research focuses primarily on membrane biosynthesis and protein sorting.

Duane P. Grandgenett, Ph.D., professor of molecular virology at the Institute for Molecular Virology, St. Louis University School of Medicine, has been awarded a one-year, $60,000 grant from the American Foundation for AIDS Research.

Dr. Grandgenett will use the award to continue his lifelong research into the reproductive process of retroviruses. Certain human retroviruses cause AIDS and still other retroviruses have been found to be associated with specific types of cancer.

Dr. Grandgenett has been studying the structure and genetics of retrovirus reproductive proteins for almost 20 years while working at the Institute for Molecular Virology. In 1978, he and research associate **Akaykumar C. Vora**, discovered the Integrase protein which is vital in the initial stages of retrovirus reproduction.

In 1983, Dr. Grandgenett became director of the Cell and Molecular Biology Graduate Training program at St. Louis University School of Medicine.

Robert E. Lynch, M.D., Ph.D., associate professor of pediatrics, St. Louis University School of Medicine, and director of the pediatric intensive care unit at Cardinal Glennon Children's Hospital, has received a one-year, $9,823 grant from the Missouri Kidney Program.

The author of numerous publications, Dr. Lynch joined the faculty of St. Louis University School of Medicine in 1981 as director of the division of pediatric nephrology and held that position until 1988.

Diagnosing voice problems such as hoarseness or treating abnormal variations in pitch and volume used to be a difficult, time-consuming and often confusing task because of the limitations of existing instruments. With state-of-the-art technology, however, voice problems are now being analyzed with the help of high-speed microcomputers located in the new Voice Laboratory at St. Louis University School of Medicine.

The voice laboratory is jointly operated by the department of otolaryngology-head and neck surgery, St. Louis University School of Medicine, and the department of communication disorders at St. Louis University. It is located on the campus of St. Louis University Medical Center in the Doctors' Office Building.

The computerized equipment in the laboratory can make more than 1,800 calculations for every 30 seconds of a patient's speech. Those who may be helped by the voice lab include patients with various pathologies of the vocal tract including cancer, nodules, contact ulcers, polyps, paralysis and cleft palate. In addition, a professional voice program is offered for anyone who uses their voice consistently including teachers, ministers, attorneys, radio/TV announcers, actors and singers.

Gary R. LaBlance, Ph.D., assistant professor of otolaryngology and chief of speech pathology is director of the voice laboratory. **Karen Steckol, Ph.D.**, professor and chairman of the department of communication disorders, St. Louis University, will assist Dr. LaBlance with therapy programs in the voice lab. In addition to his duties as director of the voice laboratory, Dr. LaBlance is also assistant professor of communication disorders and clinic director of the speech language laboratory at St. Louis University.

■ The $2.6 million renovation of the *J. Gerard Mudd, M.D. Cardiac Catheterization Laboratory* at St. Louis University Hospital provides a state-of-the-art facility to combat America's number one killer, coronary heart disease. The lab is designed with the latest technological advancements in the field of cardiology.

The 8,000-square-foot catheterization lab provides additional space and equipment for the diagnosis and intervention of heart disease.

The *J. Gerard Mudd, M.D. Catheterization Laboratory* was designed by Dr. Mudd and completed in 1951 with the aid of a fellowship grant from the National Institutes of Health. It was the first cardiac catheterization laboratory west of the Mississippi River and was characterized by technological innovation at a time when cardiac catheterization was in its infancy.

Special Report on Tort Reform — See page 212!

Washington University

■ **Valorie J. Hambley** has been named assistant dean for administration at Washington University School of Medicine in St. Louis

The appointment, effective Feb. 1, was announced by **William A. Peck, M.D.**, vice chancellor for medical affairs and dean of the School of Medicine. This is the second appointment made in an administrative reorganization at the School of Medicine. Hambley's primary responsibilities will be research administration and human resource management.

For the last seven years, Hambley served as administrator for the Department of Pharmacology, and was responsible for handling grants, personnel, payroll and finances. She also acted as a liaison between researchers, university administration and outside funding agencies. For a brief period she worked as interim co-business manager for the Office of Animal Laboratory Care.

Hambley joined the administrative staff of the pharmacology department in 1976. She became an administrative associate in 1982 and a year later was named departmental administrator. Hambley received a bachelor's degree in business management from the University of Missouri-St. Louis in 1982 and a master's degree in health services management from Webster University in 1988.

■ **Stuart A. Kornfeld, M.D.**, professor of biological chemistry and medicine at Washington University School of Medicine in St. Louis, recently was selected as the 1989 *Harden Jubilee Lecturer and Medalist*, one of the highest honors given by the British Biochemical Society.

The lecture, established in 1961 to commemorate the society's 50th anniversary, is given every few years by a biochemist of international distinction. Recipients discuss their research at the society's annual meeting, with each lecture published in the society's journal, *Biochemical Society Transactions.* Lecturers also receive the *Harden Medal*, named after Sir Arthur Harden, a Nobel Prize-winning British biochemist. The 1989 meeting was held Dec. 18-20 in London.

Kornfeld, co-director of the School of Medicine's hematology-oncology division, is recognized for his research on the biochemistry of glycoproteins.

A 1962 graduate of Washington University School of Medicine, Kornfeld has been on the School of Medicine faculty and the staff at Barnes Hospital since 1966.

■ Nobel Prize-winning biochemist **Stanley Cohen, Ph.D.**, delivered the first *Joseph Erlanger Lecture* Feb. 27, at Washington University School of Medicine in St. Louis.

Cohen, distinguished professor of biochemistry at Vanderbilt University and a former Washington University faculty member, is recognized internationally for his work on nerve growth factor (NGF) and epidermal growth factor (EGF). His lecture focused on the mechanism by which growth factor receptors such as the EGF receptor mediate transmembrane signalling in eukaryotic cells.

Cohen's first experiments on NGF and EGF were conducted at Washington University as a faculty member in the departments of zoology and radiology.

For his work he received the 1986 Nobel Prize for physiology or medicine, sharing the award with **Rita Levi-Montalcini, Ph.D.**, professor of biology emerita at Washington University. Levi-Montalcini discovered nerve growth factor in 1951, and in 1954, she and Cohen isolated it. Cohen subsequently identified and isolated a second factor, epidermal growth factor. In 1959, he joined the faculty at Vanderbilt as an assistant professor of biochemistry. He was named a distinguished professor there in 1986.

The *Erlanger Lecture* is sponsored by the School of Medicine's Department of Cell Biology and Physiology to honor the late Nobel Prize-winning physiologist **Joseph Erlanger, M.D.**, who headed the department from 1910-46.

■ **Steven Nothwehr**, a student in the doctoral program at Washington University School of Medicine in St. Louis, has been named the 1990 recipient of the *Gerty T. Cori Predoctoral Fellowship and Prize.*

The award, established by Sigma

Chemical Company in 1984 in honor of the late **Gerty T. Cori**, provides support for either an M.D./Ph.D. or a Ph.D. candidate in biochemistry and molecular biophysics who has displayed outstanding research abilities in carrying out his or her thesis project.

Nothwehr's research focuses on understanding how signal peptides function to direct proteins to be secreted from mammalian cells. Working in the laboratory of **Jeffrey I. Gordon, M.D.**, professor of medicine and of biochemistry and molecular biophysics, Northwehr is now developing rules on how to best adapt different signal peptides to different proteins. Information from his research could help genetic engineers design ways to produce and secrete a wide range of artificial or novel proteins with useful biological properties from cells.

The *Cori Award* provides a stipend as well as a monetary prize so that the recipient may attend a scientific meeting or buy books or other academic materials.

■ A Memorial Service for **Edward Massie, M.D.**, an internationally renowned cardiologist and professor emeritus of clinical medicine at the School of Medicine, was held March 5, in Scarpellino Auditorium, located on the first floor of Mallinckrodt Institute of Radiology, Washington University School of Medicine.

Massie, 79, died February 5 of systemic amyloidosis, which causes multiple organ failure.

Massie taught at the School of Medicine from 1938-80 and retired from medical practice in 1988. He was a pioneer in using computers to interpret electrocardiograms, and was instrumental in establishing the medical center's first coronary care unit. He was a founder and director of Jewish Hospital's Heart Station, and also served as director of the Barnes Hospital Heart Station.

Massie received his medical degree from Washington University School of Medicine. Well-known for his fund-raising activities at the School of Medicine, in 1985 he received the Distinguished Alumnus Award from the University Alumni Association. An award for top cardiology students, a research endowment fund and an annual cardiology lecture are established in his name.

He was co-author of a 1951 book, *"Clinical Scalar Electrocardiography,"* which recently appeared in its eighth edition and has been translated into several languages. He also published more than 80 papers.

The family has requested that memorial contributions be sent to the Department of Medicine at the School of Medicine.

■ The National Cancer Institute (NCI) has awarded Washington University's Mallinckrodt Institute of Radiology a $400,000 grant to accurately assess the diagnostic effectiveness of new imaging techniques in patients with primary and recurrent colorectal cancer.

Dennis M. Balfe, M.D., associate professor of radiology at Mallinckrodt Institute and principal investigator of this project, will lead his team of researchers to study various ways to image colorectal cancer more efficiently, determine how colorectal cancer should be imaged and study the most useful techniques.

Balfe and his team are also looking into the spread of cancer from the colon to the liver.

Funding for the grant proposals were awarded to four other institutions: New York University; University of Michigan; Johns Hopkins University, Baltimore; and University of Washington at Seattle. **Barbara J. McNeil, M.D., Ph.D.**, professor and head of the Department of Health Care Policy and professor of radiology at Harvard Medical School, will act as statistical analyst for the participating universities.

Balfe has been a faculty member at the Mallinckrodt Institute for more than 10 years.

■ Audiologists at Washington University School of Medicine, St. Louis, are testing a device on six subjects that improves functioning of 22-channel cochlear implants. Cochlear implants are surgically inserted to provide some sound to profoundly deaf patients who cannot be helped by conventional hearing aids. The new processor is being evaluated at the Cochlear Implant Program in the School of Medicine's Department of Otolaryngology.

The reason for the improved sound in the device is that the new processor is all digital rather than analog, allowing for less stringent parameters of operation, according to **Margaret W. Skinner, Ph.D.**, director of the Cochlear Implant Program. Washington University was the only one of 185 centers in the United States chosen to test the device. Additional testing is being conducted in Melbourne, Australia and Hanover, Germany.

Results of Skinner's preliminary study indicate that all six patients and their families find communication is significantly easier. Skinner presented results of her study as the keynote speaker at the 1990 Colorado Otology-Audiology Conference March 4 in Breckenridge, Colorado.

She recently received a three-year $411,489 National Institutes of Health grant to investigate methods for getting optimal benefit from cochlear implants. Results will be incorporated into ongoing clinical care of patients.

University of Missouri-Columbia

■ The MU School of Medicine's department of anesthesiology recently dedicated mid-Missouri's first hyperbaric oxygen chamber, a device used to safely administer high levels of oxygen. **Herbert Ferrari, M.D.**, professor of anesthesiology will serve as director of the new *Dr. Jefferson C. Davis, Jr. Hyperbaric Medicine Center*. Smaller chambers are located in two other Missouri hospitals.

Hyperbaric oxygen therapy is used to treat burns, failing skin grafts, and chronic and non-healing wounds. It also can benefit patients suffering from carbon monoxide poisoning, gas gangrene or tissue damage from cancer radiation treatments. A recent study revealed the therapy contributed to 88% healing of problem wounds previously considered treatable only by amputation.

■ MU has been chosen as an investigational site for the Northgate biliary lithotripter. Currently approved for kidney stone removal, lithotripsy may provide a non-surgical alternative for some 30% of gallstone sufferers.

The new equipment sends out sonic shock waves to break up gallstones. The disintegrated stones are further dissolved by medication, allowing them to pass through the body's digestive system. The patient is able to resume normal activities within 24 hours, as opposed to several weeks of recovery following traditional surgery involving gallbladder removal, according to **Frank Mitchell, M.D.**, professor of surgery and chief investigator for the study.

■ **G.W.N. Eggers, Jr., M.D.**, professor and chairman of anesthesiology, has been elected to a one-year term as first vice-president of the 27,000-member American Society of Anesthesiologists.

■ **Richard Oliver, Ph.D.**, director of the School of Health Related Professions, recently was elected secretary/treasurer of the Midwest Association of Allied Health Deans in Academic Health Centers. The association was established to foster an exchange of ideas and expertise among deans and directors of allied health units. It currently has 19 member institutions from 12 states representing faculty and more than 6,000 students.

■ **Sara E. Walker, M.D.**, professor in the department of medicine's division of immunology and rheumatology, was named president of the Missouri chapter of the American College of Physicians at the spring council meeting March 24. Walker, governor-elect of the Missouri chapter, will receive the governor's gavel for a four-year term at the fall meeting on October 21 at the Lake of the Ozarks. Walker, who is chief of the rheumatology section at Harry S. Truman Memorial Veterans Hospital, also served in March as a member of the immunology, virology and pathology study section of the National Institutes of Health in Washington.

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New Members

■ **Patti W. Albright, M.D.**, 4900 Swope Parkway, Kansas City 64130, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Albright received her preliminary education at Cornell University and obtained her medical degree at the University of Wisconsin in 1984. She completed her residency at La-Crosse Lutheran Hospital/Gundersen Clinic, LaCrosse, WI. Dr. Albright specializes in internal medicine.

■ **Charlotte M. Balcer, M.D.**, Whispering Oaks Hospital, 1314 W. Edgewood, Jefferson City 65109, has become a member of the Cole County Medical Society. Dr. Balcer received her preliminary education at the University of Missouri-Kansas City and obtained her medical degree at UMKC in 1985. She completed her residency at the Veterans Administration Hospital, University of Missouri, Columbia, MO. Dr. Balcer specializes in psychiatry.

■ **Russell L. Benson, M.D.**, Department of Pathology, 4949 Rockhill Road, Kansas City 64110, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Benson received his preliminary education at the University of Missouri-Kansas City and obtained his medical degree at the University of Missouri-Columbia in 1982. He completed his residency at the University of Missouri Hospital and Clinics, Columbia, MO. Dr. Benson specializes in pathology.

■ **H. Clay Cundiff, M.D.**, 4801 Cliff Ave., Suite 100, Independence 64055, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Cundiff received his preliminary education at Cornell University and obtained his medical degree at the University of Missouri-Columbia in 1974. He completed his residency at the University of Missouri, Columbia, MO. Dr. Cundiff specializes in ophthalmology.

■ **Louis P. Dehner, M.D.**, Anatomic Pathology, Barnes Hospital, One Barnes Hospital Plaza, St. Louis 63110, has become a member of the St. Louis Metropolitan Medical Society. Dr. Dehner obtained his medical degree at the Washington University School of Medicine in 1966. He completed his residency at Barnes Hospital, St. Louis, MO. Dr. Dehner specializes in pathology.

■ **Doug O. Dehning, M.D.**, 4801 Cliff Ave., Suite 100, Independence 64055, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Dehning received his preliminary education at the University of Wyoming and obtained his medical degree at Creighton University School of Medicine in 1982. He completed his residency at Truman Medical Center, Kansas City, MO. Dr. Dehning specializes in ophthalmology.

■ **Alan L. Engelberg, M.D.**, Monsanto Company, A3NB, 800 N. Lindbergh Blvd., St. Louis 63167, has become a member of the St. Louis Metropolitan Medical Society. Dr. Engelberg obtained his medical degree at the Mount Sinai School of Medicine in 1974. He completed his residency at the University of Arizona, Tucson, AZ. Dr. Engelberg specializes in occupational medicine.

■ **James R. Ennis, D.O.**, Holts Summit Family Clinic, 198 W. Simon Blvd., P.O. Box 217, Holts Summit 65043, has become a member of the Cole County Medical Society. Dr. Ennis received his preliminary education at the University of Missouri-Kansas City and obtained his osteopathic degree at the Kansas City College of Osteopathic Medicine in 1975. He completed his residency at Charles E. Still Osteopathic Hospital, Jefferson City, MO. Dr. Ennis specializes in general practice.

■ **Gary L. Gambill, M.D.**, 628 Stablestone Drive, Chesterfield 63017, has become a member of the Missouri State Medical Association. Dr. Gambill obtained his medical degree at the Oregon Health Sciences University School of Medicine in 1974. He completed his residency at the University of Michigan School of Public Health, Ann Arbor, MI. Dr. Gambill specializes in emergency medicine.

■ **John W. Geurkink, M.D.**, St. John's Medical Center, Department of Radiology, 2727 McClelland Blvd., Joplin 64804, has become a member of the Jasper County Medical Society. Dr. Geurkink received his preliminary education at Oklahoma State University and obtained his medical degree at the University of Oklahoma School of Medicine in 1966. He completed his residency at the University Hospitals, Oklahoma City, OK. Dr. Geurkink specializes in diagnostic radiology.

■ **Merlyn D. Gibson, M.D.**, Columbia Radiology, LTD, 3401 Berrywood, Suite 103, Columbia 65201, has become a member of the Boone County Medical Society. Dr. Gibson received his preliminary education at the United States Military Academy, West Point and obtained his medical degree at Creighton University School of Medicine in 1977. He completed his residency at the Fitzsimons Army Medical Center, Aurora, CO. Dr. Gibson specializes in diagnostic radiology.

■ **Joseph E. Graham, M.D.**, 11155 Dunn Road, St. Louis 63136, has become a member of the St. Louis Metropolitan Medical Society. Dr. Graham obtained his medical degree at the St. Louis University School of Medicine in 1976. He completed his residency at the Bowman Gray School of Medicine at Wake Forest University, Winston-Salem, NC. Dr. Graham specializes in cardiothoracic surgery.

■ **Peter C. Hamel, M.D.**, 109 Virginia, Hannibal 63401, has become a member of the Northeast Missouri County Medical Society. Dr. Hamel received his preliminary education at Wheaton College and obtained his medical degree at the University of Wisconsin Medical School in 1977. He completed his residency at St. Luke's Hospital, Milwaukee, WI. Dr. Hamel specializes in pathology.

■ **Nuzhat N. Handoo, M.D.,** 1012 N. Main, Sikeson 63801, has become a member of the SEMO County Medical Society. Dr. Handoo received her preliminary education at the Johns Hopkins University and obtained her medical degree at the Fatima Jinnah Medical College, Punjab University - Pakistan in 1979. She completed her residency at the Metropolitan Hospital Center, New York, N.Y. Dr. Handoo specializes in pediatrics.

■ **MaryLee Heim, M.D.,** Truman Medical Center, Emergency Department, 2301 Holmes St., Kansas City 64152, has become a member of the Missouri State Medical Association. Dr. Heim received her preliminary education at San Diego State University and obtained her medical degree at the University of Missouri-Kansas City School of Medicine in 1976. She completed her residency at Truman Medical Center, Kansas City, MO. Dr. Heim specializes in emergency medicine.

■ **Peter S. Holt, M.D.,** 4320 Wornall Road, Suite 208, Kansas City 64111, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Holt received his preliminary education at Tulane University and obtained his medical degree at the University of Kansas Medical School in 1984. He completed his residency at St. Luke's Hospital, Kansas City, MO. Dr. Holt specializes in internal medicine/gerontology.

■ **Michael P. Hurly, M.D.,** Ferguson's Medical Lab, 2700 McClelland Blvd., Joplin 64804, has become a member of the Jasper County Medical Society. Dr. Hurly received his preliminary education at St. John's University and obtained his medical degree at the Medical College of Pennsylvania in 1975. He completed his residency at St. Paul Ramsey Medical Center, St. Paul, MN. Dr. Hurly specializes in anatomic and clinical pathology.

■ **Mark E. Idstrom, M.D.,** Research Radiology Group, Inc., 6400 S. Prospect, Suite 310, Kansas City 64132, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Idstrom received his preliminary education at the University of Minnesota and obtained his medical degree at the University of Minnesota School of Medicine in 1975. He completed his residency at the University of Minnesota Hospital, Minneapolis, MN. Dr. Idstrom specializes in diagnostic radiology.

■ **James B. Kase, Jr., M.D.,** 2929 Baltimore, Suite 330, Kansas City 64108, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Kase received his preliminary education at Bucknell University and obtained his medical degree at the Medical College of Pennsylvania in 1980. He completed his residency at the Medical College of Pennsylvania and Hospital, Philadelphia, PA. Dr. Kase specializes in cardiovascular and thoracic surgery.

■ **Barbara P. Keller, M.D.,** Department of Anesthesiology, University of Missouri Hospital and Clinics, One Hospital Drive, Columbia 65212, has become a member of the Boone County Medical Society. Dr. Keller received her preliminary education at Coe College and obtained her medical degree at the University of Missouri-Columbia School of Medicine in 1985. She completed her residency at Norfolk and Northwich Hospitals, Norwich, England. Dr. Keller specializes in anesthesiology.

■ **Debra G. Koivunen, M.D.,** Department of Surgery, University of Misouri Hospital and Clinics, NW301, One Hospital Drive, Columbia 65212, has become a member of the Boone County Medical Society. Dr. Koivunen received her preliminary education at the University of Michigan and obtained her medical degree at the University of Michigan School of Medicine in 1978. She completed her residency at the University of Missouri, Columbia, MO. Dr. Koivunen specializes in general surgery.

■ **Robert F. Mahnken, M.D.,** 2700 McClelland Blvd., Joplin 64803, has become a member of the Jasper County Medical Society. Dr. Mahnken received his preliminary education at Oklahoma State University and obtained his medical degree at the University of Oklahoma School of Medicine in 1985. He completed his residency at Oklahoma Memorial Hospital, Oklahoma City, OK. Dr. Mahnken specializes in orthopaedic surgery.

■ **Melissa J. Mills, M.D.,** 1000 E. 50th St., Suite 350, Kansas City 64110, has become a member of the Missouri State Medical Association. Dr. Mills obtained her medical degree at the Bowman Gray School of Medicine at Wake Forest University in 1983. She completed her residency at the University of Kansas Medical Center, Kansas City, KS. Dr. Mills specializes in internal medicine.

■ **Eric Murray, M.D.,** Anesthesia Department, St. Mary's Health Center, 100 St. Mary's Medical Plaza, Jefferson City 65101, has become a member of the Cole County Medical Society. Dr. Murray received his preliminary education at Central College and obtained his medical degree at the University of Iowa College of Medicine in 1980. He completed his residency at Barnes Hospital, St. Louis, MO. Dr. Murray specializes in anesthesiology.

■ **Duane E. Myers, M.D.,** Radiation Oncology Center, 2727 McClelland Blvd., Joplin 64804, has become a member of the Jasper County Medical Society. Dr. Myers received his preliminary education at Northeastern Oklahoma State University and obtained his medical degree at the University of Oklahoma School of Medicine in 1983. He completed his residency at the University of Texas Health Science Center, San Antonio, TX. Dr. Myers specializes in radiation oncology.

■ **James L. Ottolini, M.D.,** 222 S. Woods Mill, Chesterfield 63017, has become a member of the St. Louis Metropolitan Medical Society. Dr. Ottolini received his preliminary education at Southern Illinois University-Carbondale and obtained his medical degree at the St. Louis University School of Medicine in 1965. He completed his residency at St. Louis University School of Medicine, St. Louis, MO. Dr. Ottolini specializes in obstetrics/gynecology.

■ **Andrew S. Pavlovich, M.D.,** 4240 Blue Ridge Blvd., #434, Kansas City

64133, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Pavlovich received his preliminary education at Wabash College and obtained his medical degree at Indiana University School of Medicine in 1983. He completed his residency at Methodist Hospital of Indiana, Indianapolis, IN. Dr. Pavlovich specializes in otolaryngology.

■ **Ann L. Peick, M.D.**, Kneibert Clinic, 686 Lester, P.O. Box 0220, Poplar Bluff 63901, has become a member of the Butler-Wayne-Ripley-Carter Counties Medical Society. Dr. Peick received her preliminary education at the University of Missouri-Columbia and obtained her medical degree at the University of Missouri-Columbia School of Medicine in 1981. She completed her residency at the University of Missouri Hospital and Clinics, Columbia, MO. Dr. Peick specializes in general surgery.

■ **Susan S. Porter, M.D.**, 8900 Ward Parkway, Kansas City 64114, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Porter received her preliminary education at Colorado State University and obtained her medical degree at the University of Kansas School of Medicine in 1979. She completed her residency at the University of Texas Health Science Center, San Antonio, TX. Dr. Porter specializes in anesthesiology.

■ **Gary L. Porubusky, M.D.**, 2700 Hospital Drive, Suite 340, North Kansas City, MO 64116, has become a member of the Clay-Platte County Medical Society. Dr. Porubusky received his preliminary education at Kansas State University and obtained his medical degree at the University of Nebraska School of Medicine in 1978. He completed his residency at the University of Nebraska Hospital and Clinics, Omaha, NE. Dr. Porubsky specializes in orthopaedic surgery.

■ **Theodore W. Roberts, M.D.**, 1118 N. Main, Suite B, Sikeston 63801, has become a member of the SEMO County Medical Society. Dr. Roberts received his preliminary education at Central College and obtained his medical degree at the University of Missouri-Columbia School of Medicine in 1966. He completed his residency at the University of Louisville, Louisville General Hospital, Louisville, KY. Dr. Roberts specializes in family practice.

■ **James W. Schlotter, M.D.**, 2401 Cunningham, Joplin 64804, has become a member of the Jasper County Medical Society. Dr. Schlotter received his preliminary education at the University of Texas-Austin and obtained his medical degree at the University of Texas Medical Branch-Galveston in 1981. He completed his residency at the University of Texas Health Science Center, San Antonio, TX. Dr. Schlotter specializes in general/vascular surgery.

■ **Frederic L. Seligson, M.D.**, Thoracic and Vascular Surgeons, P.C., 4949 Rockhill Road, Suite 2203, Kansas City 64110, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Seligson received his preliminary education at Dartmouth College and obtained his medical degree at the University of Pittsburgh School of Medicine in 1982. He completed his residency at Beth Israel Hospital, Boston, MA. Dr. Seligson specializes in thoracic and cardiovascular surgery.

■ **Martin J. Smolik, Jr., M.D.**, 1329 E. 32nd St., Suite 2726, Joplin 64804, has become a member of the Jasper County Medical Society. Dr. Smolik received his preliminary education at Southern Nazarene University and obtained his medical degree at the University of Oklahoma School of Medicine in 1985. He completed his residency at the University of Oklahoma Teaching Hospital, Oklahoma City, OK. Dr. Smolik specializes in anesthesiology.

■ **George D. Solomon, III, M.D.**, MediQuick Convenience Clinic, 1101 N. Providence, Columbia 65203, has become a member of the Boone County Medical Society. Dr. Solomon received his preliminary education at St. Louis University and obtained his medical degree at the University of Missouri-Columbia School of Medicine in 1986. He completed his residency at the University of Missouri Hospital and Clinics, Columbia, MO. Dr. Solomon specializes in family practice.

■ **John P. Spencer, M.D.**, 1115 Alaska, West Plains 65775, has become a member of the South Central Counties Medical Society. Dr. Spencer received his preliminary education at the University of Illinois and obtained his medical degree at the University of Illinois Medical School in 1970. He completed his residency at St. Joseph Hospital, Chicago, IL. Dr. Spencer specializes in internal medicine/cardiology.

■ **Gordon A. Welke, M.D.**, 2509 Lucy Lee Parkway, Poplar Bluff 63901, has become a member of the Butler-Wayne-Ripley-Carter Counties Medical Society. Dr. Welke received his preliminary education at the University of Saskatchewan and obtained his medical degree at the University of Saskatchewan School of Medicine in 1979. He completed his residency at Hurley Medical Center, Flint, MI. Dr. Welke specializes in orthopaedic surgery.

■ **Devin D. Zimmerman, M.D.**, Barnes Hospital Plaza, Box 8111, St. Louis 63110, has become a member of the St. Louis Metropolitan Medical Society. Dr. Zimmerman obtained his medical degree at the University of Michigan in 1986. He completed his residency at Barnes Hospital, St. Louis, MO. Dr. Zimmerman specializes in neurology.

■ Resident Sections

Boone County Resident Section

Jayprakash V. Patel, M.D. — *urology*
Jeffrey A. Riesman, M.D. — *extern*

St. Louis Resident Section

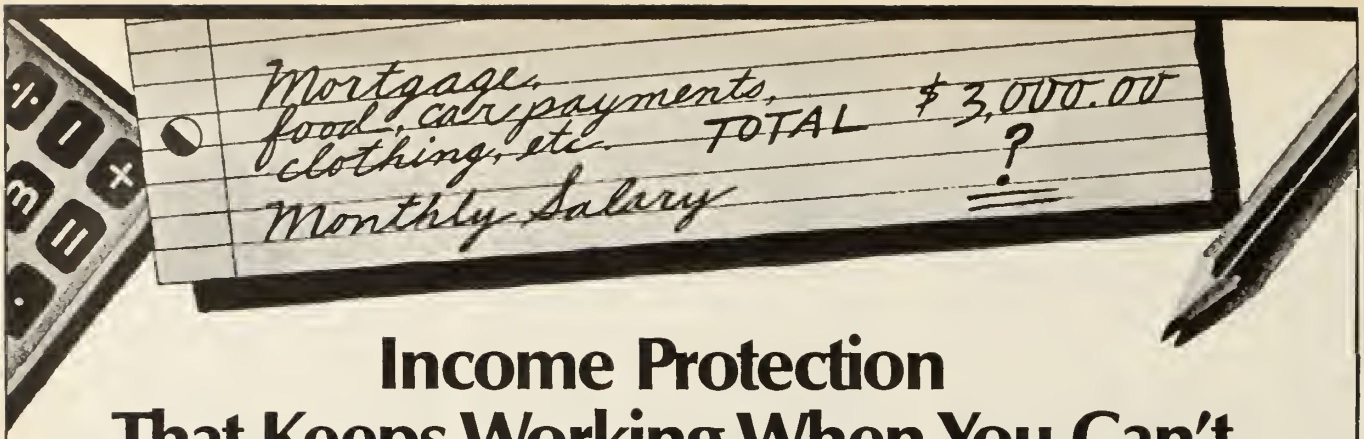
Gregory T. Sniper, M.D. — *family practice*

■ Student Members

St. Louis University
Thomas J. Kasper

University of Missouri-Kansas City
Nicolaus Kuehn

Washington University
Jon G. Lee



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Physician's Recognition Awards

Forty-four MSMA members qualified for the MSMA-AMA Physician's Recognition Award during January 1990. The award, presented by the Missouri State Medical Association and the American Medical Association, is given to those physicians who voluntarily complete 150 credit hours of continuing medical education within a three-year period. Sixty of the credit hours must be earned in Category 1 programs.

Boone

William C. Allen, *Columbia*
Don M. Delwood, *Columbia*
Robert W. Gaines, *Columbia*

Buchanan

Eugene G. Wolanski, *St. Joseph*

Butler-Wayne-Ripley-Carter

Sivaprasad D. Madduri, *Poplar Bluff*

Cape Girardeau

Trygve O. Honaas, *Cape Girardeau*
Sidney K. Griffith, *Cape Girardeau*
Mark C. Kasten, *Cape Girardeau*

Chariton-Macon-Monroe-Randolph

Lawrence L. Harms, *Affton*

Clay-Platte

Mark L. Epstein, *Smithville*
Robert J. Gauer, *Kansas City*

Franklin-Gasconade-Warren

James G. Shea, *Washington*

Greene

Henry B. Ivy, *Springfield*
John W. Meyer, *Springfield*
Kimberley A. Prater, *Springfield*
Dan T. Sullivan, *Springfield*
John E. Wolfe, *Springfield*

Jasper

David L. Straub, *Joplin*

Metro Med - Greater Kansas City

Antoni M. Diehl, *Kansas City*
James K. Fisher, *Kansas City*
Felix D. Fortin, *Kansas City*
Andrew B. Kaufman, *Kansas City*
Lawrence E. Koppers, *Kansas City*
Revis C. Lewis, *Kansas City*
Ralph E. MacNaughton, *Kansas City*
Robert A. MacNaughton, *Kansas City*
John E. Pawsat, *Kansas City*
Rita D. Perll, *Kansas City*

Mineral Area

John R. Fitz, *Farmington*

Pettis

Charles A. Worley, *Laurie*

SEMO

Daniel H. Frissell, *Chaffee*

St. Charles - Lincoln

Vincent P. Perna, *St. Louis*

St. Louis Metro

Izak H. Kielmovitch, *St. Louis*
Stanley W. Kim, *St. Louis*
Jose A. Lima, *St. Louis*
Edgardo G. Mayuga, *St. Louis*
Gary H. Myers, *Chesterfield*
David W. Ortbals, *Chesterfield*
Arthur L. Prensky, *St. Louis*
John J. Purcell, *St. Louis*
Paul G. Schneider, *St. Louis*
Emel A. Sumer, *Bridgeton*
Stephen R. Waltman, *St. Louis*

West Central

Louis E. Gehm, *Butler*

Missouri Physicians' Health Program
Contributors

The Missouri State Medical Association and the Missouri Physicians' Health Program would like to thank the following contributors to the MPH Program. It is through the generous contribution of these institutions that the MPH Program can continue to assist physicians in beginning and maintaining their recovery process.

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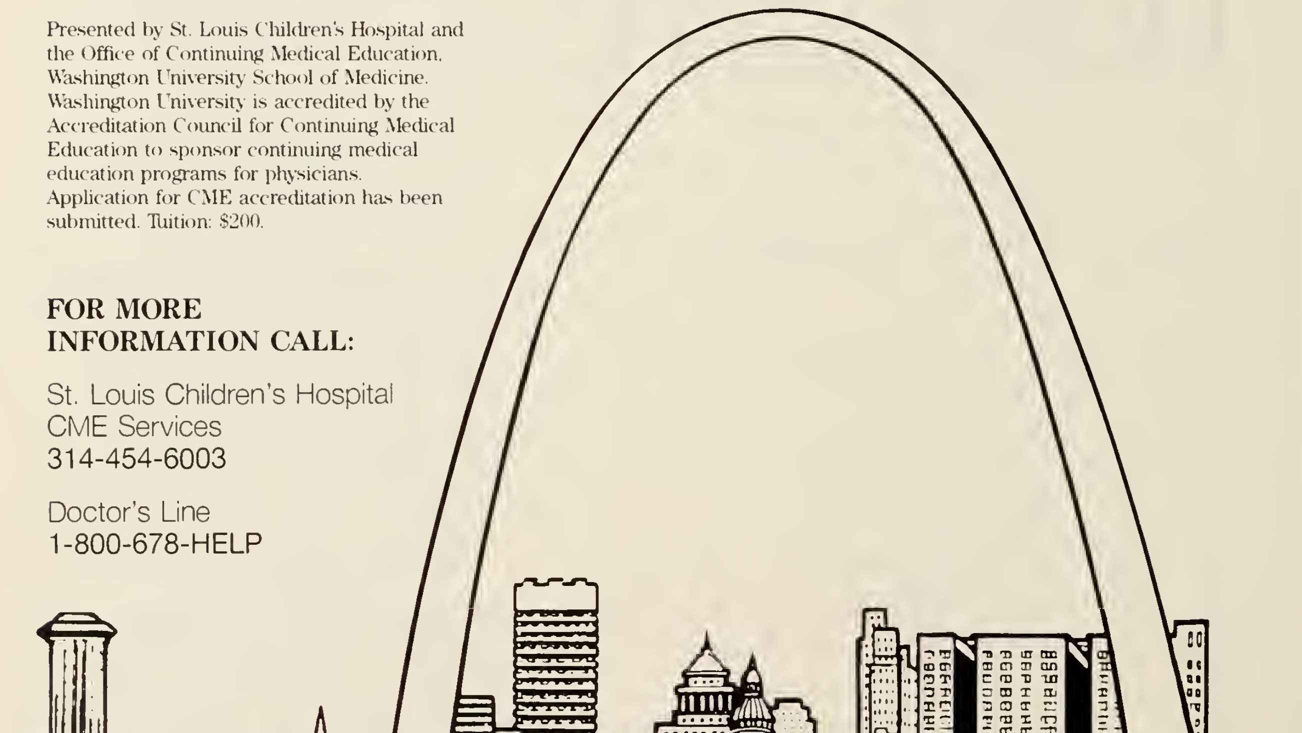

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References:

1. A. Morales et al., New England Journal of Medicine: 1221. November 12, 1981.
2. Goodman, Gilman — The Pharmacological basis of Therapeutics 6th ed., p. 176-188. McMillan December Rev. 1/85.
3. Weekly Urological Clinical letter, 27:2, July 4, 1983.
4. A. Morales et al., The Journal of Urology 128: 45-47, 1982.

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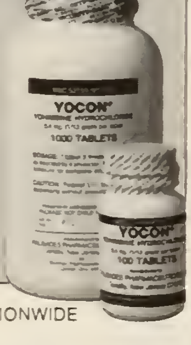

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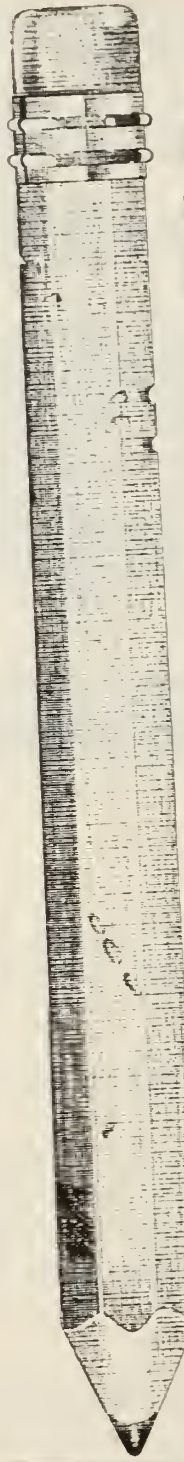

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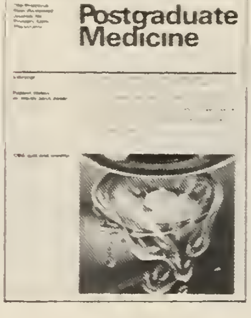

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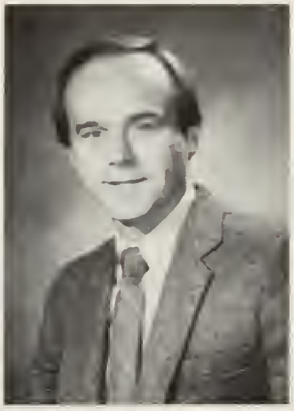

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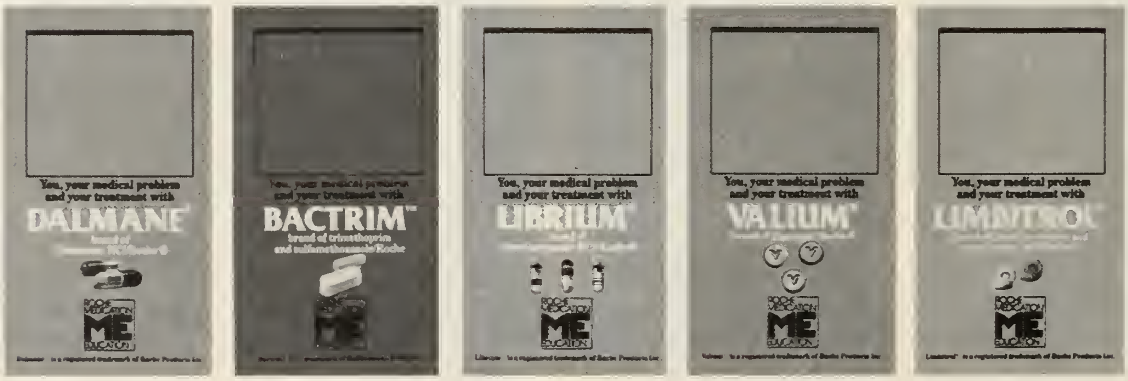
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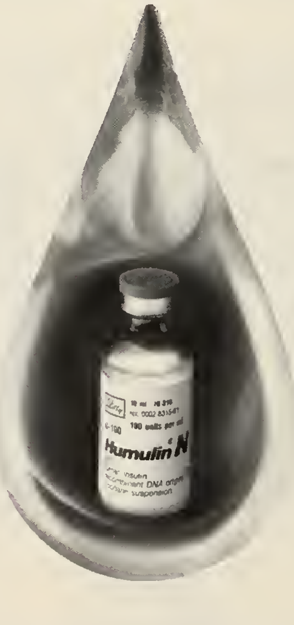

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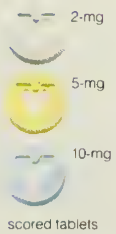
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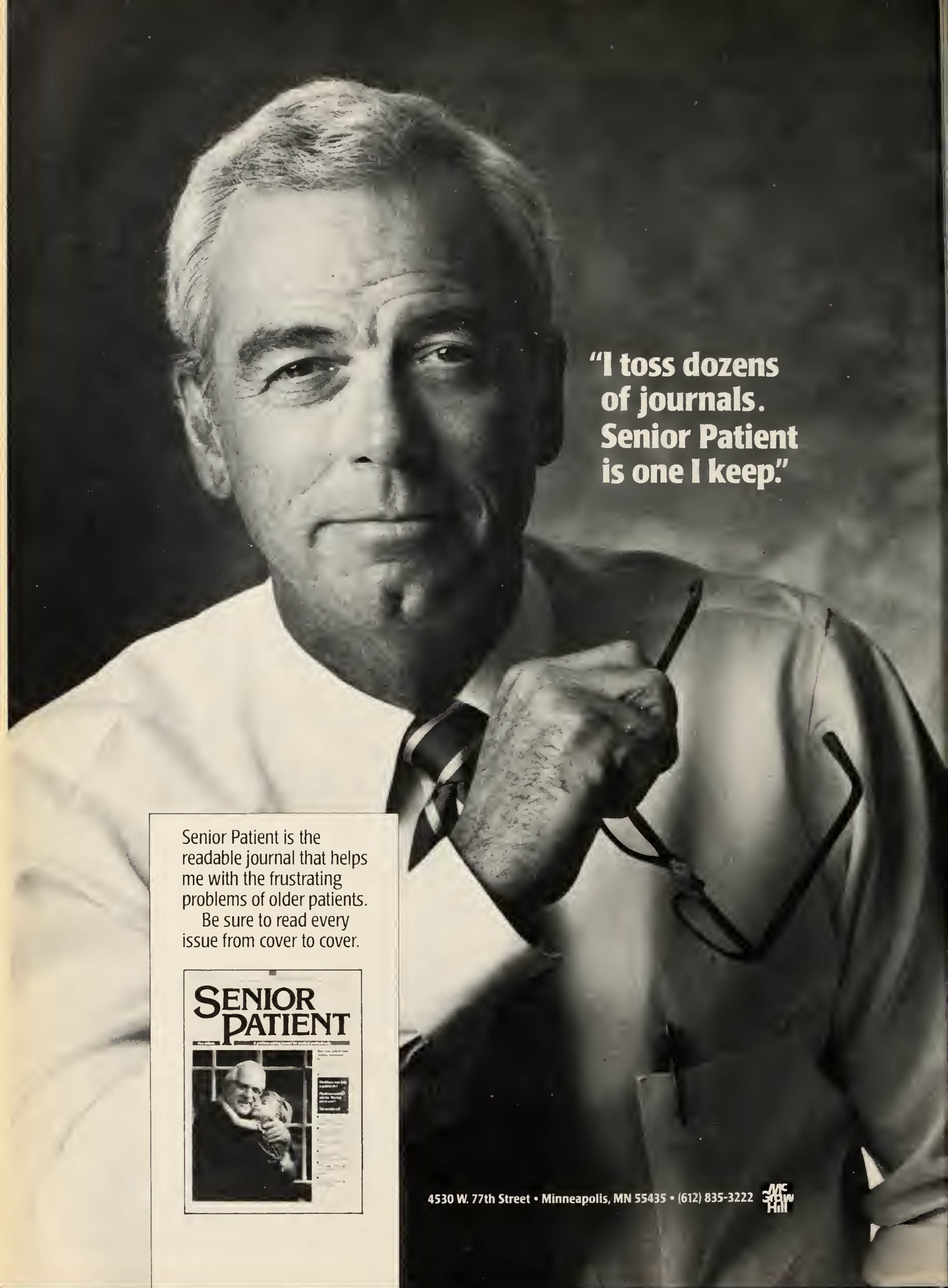

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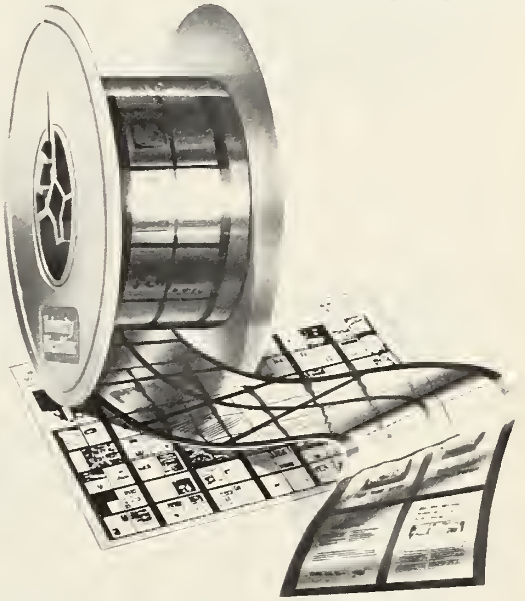

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VASOTEC®

(ENALAPRIL MALEATE | MSD)

VASOTEC is available in 2.5-mg, 5-mg, 10-mg, and 20-mg tablet strengths.

Contraindications: VASOTEC® (Enalapril Maleate, MSD) is contraindicated in patients who are hypersensitive to this product and in patients with a history of angioedema related to previous treatment with an ACE inhibitor.

Warnings: *Angioedema* Angioedema of the face, extremities, lips, tongue, glottis, and/or larynx has been reported in patients treated with ACE inhibitors, including VASOTEC In such cases, VASOTEC should be promptly discontinued and the patient carefully observed until the swelling disappears In instances where swelling has been confined to the face and lips, the condition has generally resolved without treatment, although antihistamines have been useful in relieving symptoms Angioedema associated with laryngeal edema may be fatal **Where there is involvement of the tongue, glottis, or larynx likely to cause airway obstruction, appropriate therapy, e.g., subcutaneous epinephrine solution 1:1000 (0.3 mL to 0.5 mL), should be promptly administered.** (See ADVERSE REACTIONS.)

Hypotension Excessive hypotension is rare in uncomplicated hypertensive patients treated with VASOTEC alone Patients with heart failure given VASOTEC commonly have some reduction in blood pressure, especially with the first dose, but discontinuation of therapy for continuing symptomatic hypotension usually is not necessary when dosing instructions are followed, caution should be observed when initiating therapy (See DOSAGE AND ADMINISTRATION) Patients at risk for excessive hypotension, sometimes associated with oliguria and/or progressive azotemia and rarely with acute renal failure and/or death, include those with the following conditions or characteristics. heart failure, hyponatremia, high-dose diuretic therapy, recent intensive diuresis or increase in diuretic dose, renal dialysis, or severe volume and/or salt depletion of any etiology. It may be advisable to eliminate the diuretic (except in patients with heart failure), reduce the diuretic dose, or increase salt intake cautiously before initiating therapy with VASOTEC in patients at risk for excessive hypotension who are able to tolerate such adjustments (See PRECAUTIONS, *Drug Interactions* and ADVERSE REACTIONS.) In patients at risk for excessive hypotension, therapy should be started under very close medical supervision and such patients should be followed closely for the first two weeks of treatment and whenever the dose of enalapril and/or diuretic is increased Similar considerations may apply to patients with ischemic heart disease or cardiovascular disease in whom an excessive fall in blood pressure could result in a myocardial infarction or cerebrovascular accident If excessive hypotension occurs, the patient should be placed in the supine position and, if necessary, receive an intravenous infusion of normal saline A transient hypotensive response is not a contraindication to further doses of VASOTEC, which usually can be given without difficulty once the blood pressure has stabilized If symptomatic hypotension develops, a dose reduction or discontinuation of VASOTEC or concomitant diuretic may be necessary

Neutropenia/Agranulocytosis Another ACE inhibitor, captopril, has been shown to cause agranulocytosis and bone marrow depression, rarely in uncomplicated patients but more frequently in patients with renal impairment, especially if they also have a collagen vascular disease. Available data from clinical trials of enalapril are insufficient to show that enalapril does not cause agranulocytosis at similar rates. Foreign marketing experience has revealed several cases of neutropenia or agranulocytosis in which a causal relationship to enalapril cannot be excluded Periodic monitoring of white blood cell counts in patients with collagen vascular disease and renal disease should be considered

Precautions: *General Impaired Renal Function* As a consequence of inhibiting the renin-angiotensin-aldosterone system, changes in renal function may be anticipated in susceptible individuals In patients with severe heart failure whose renal function may depend on the activity of the renin-angiotensin-aldosterone system, treatment with ACE inhibitors, including VASOTEC, may be associated with oliguria and/or progressive azotemia and rarely with acute renal failure and/or death.

In clinical studies in hypertensive patients with unilateral or bilateral renal artery stenosis, increases in blood urea nitrogen and serum creatinine were observed in 20% of patients These increases were almost always reversible upon discontinuation of enalapril and/or diuretic therapy In such patients, renal function should be monitored during the first few weeks of therapy

Some patients with hypertension or heart failure with no apparent preexisting renal vascular disease have developed increases in blood urea and serum creatinine, usually minor and transient, especially when VASOTEC has been given concomitantly with a diuretic. This is more likely to occur in patients with preexisting renal impairment. Dosage reduction and/or discontinuation of the diuretic and/or VASOTEC may be required.

Evaluation of patients with hypertension or heart failure should always include assessment of renal function. (See DOSAGE AND ADMINISTRATION)

Hyperkalemia Elevated serum potassium (>5 7 mEq/L) was observed in approximately 1% of hypertensive patients in clinical trials In most cases these were isolated values which resolved despite continued therapy Hyperkalemia was a cause of discontinuation of therapy in 0.28% of hypertensive patients In clinical trials in heart failure, hyperkalemia was observed in 3 8% of patients, but was not a cause for discontinuation

Risk factors for the development of hyperkalemia include renal insufficiency, diabetes mellitus, and the concomitant use of potassium-sparing diuretics, potassium supplements, and/or potassium-containing salt substitutes, which should be used cautiously, if at all, with VASOTEC. (See *Drug Interactions.*)

Surgery/Anesthesia In patients undergoing major surgery or during anesthesia with agents that produce hypotension, enalapril may block angiotensin II formation secondary to compensatory renin release If hypotension occurs and is considered to be due to this mechanism, it can be corrected by volume expansion

Information for Patients

Angioedema Angioedema, including laryngeal edema, may occur especially following the first dose of enalapril. Patients should be so advised and told to report immediately any signs or symptoms suggesting angioedema (swelling of face, extremities, eyes, lips, tongue, difficulty in swallowing or breathing) and to take no more drug until they have consulted with the prescribing physician

Hypotension Patients should be cautioned to report lightheadedness, especially during the first few days of therapy If actual syncope occurs, the patients should be told to discontinue the drug until they have consulted with the prescribing physician.

All patients should be cautioned that excessive perspiration and dehydration may lead to an excessive fall in blood pressure because of reduction in fluid volume Other causes of volume depletion such as vomiting or diarrhea may also lead to a fall in blood pressure, patients should be advised to consult with the physician.

Hyperkalemia Patients should be told not to use salt substitutes containing potassium without consulting their physician.

Neutropenia Patients should be told to report promptly any indication of infection (e.g , sore throat, fever) which may be a sign of neutropenia

NOTE As with many other drugs, certain advice to patients being treated with enalapril is warranted This information is intended to aid in the safe and effective use of this medication. It is not a disclosure of all possible adverse or intended effects.

Drug Interactions

Hypotension Patients on Diuretic Therapy Patients on diuretics and especially those in whom diuretic therapy was recently instituted may occasionally experience an excessive reduction of blood pressure after initiation of therapy with enalapril The possibility of hypotensive effects with enalapril can be minimized by either discontinuing the diuretic or increasing the salt intake prior to initiation of treatment with enalapril If it is necessary to continue the diuretic, provide close medical supervision after the initial dose for at least two hours and until blood pressure has stabilized for at least an additional hour (See WARNINGS and DOSAGE AND ADMINISTRATION)

Agents Causing Renin Release The antihypertensive effect of VASOTEC is augmented by antihypertensive agents that cause renin release (e g , diuretics).

Other Cardiovascular Agents. VASOTEC has been used concomitantly with beta-adrenergic-blocking agents, methyldopa, nitrates, calcium-blocking agents. hydralazine, prazosin, and digoxin without evidence of clinically significant adverse interactions

Agents Increasing Serum Potassium. VASOTEC attenuates potassium loss caused by thiazide-type diuretics. Potassium-sparing diuretics (e g , spironolactone, triamterene, or amiloride), potassium supplements, or potassium-containing salt substitutes may lead to significant increases in serum potassium. Therefore, if concomitant use of these agents is indicated because of demonstrated hypokalemia, they should be used with caution and with frequent monitoring of serum potassium. Potassium-sparing agents should generally not be used in patients with heart failure receiving VASOTEC.

Lithium. Lithium toxicity has been reported in patients receiving lithium concomitantly with drugs which cause elimination of sodium, including ACE inhibitors A few cases of lithium toxicity have been reported in patients receiving concomitant VASOTEC and lithium and were reversible upon discontinuation of both drugs. It is recommended that serum lithium levels be monitored frequently if enalapril is administered concomitantly with lithium.

Pregnancy – Category C: There was no fetotoxicity or teratogenicity in rats treated with up to 200 mg/kg/day of enalapril (333 times the maximum human dose) Fetotoxicity, expressed as a decrease in average fetal weight, occurred in rats given 1200 mg/kg/day of enalapril but did not occur when these animals were supplemented with saline Enalapril was not teratogenic in rabbits However, maternal and fetal toxicity occurred in some rabbits at doses of 1 mg/kg/day or more. Saline supplementation prevented the maternal and fetal toxicity seen at doses of 3 and 10 mg/kg/day, but not at 30 mg/kg/day (50 times the maximum human dose)

Radioactivity was found to cross the placenta following administration of labeled enalapril to pregnant hamsters

There are no adequate and well-controlled studies of enalapril in pregnant women However, data are available that show enalapril crosses the human placenta Because the risk of fetal toxicity with the use of ACE inhibitors has not been clearly defined, VASOTEC® (Enalapril Maleate, MSD) should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus

Postmarketing experience with all ACE inhibitors thus far suggests the following with regard to pregnancy outcome Inadvertent exposure limited to the first trimester of pregnancy has not been reported to affect fetal outcome adversely Fetal exposure during the second and third trimesters of pregnancy has been associated with fetal and neonatal morbidity and mortality

When ACE inhibitors are used during the later stages of pregnancy, there have been reports of hypotension and decreased renal perfusion in the newborn Oligohydramnios in the mother has also been reported, presumably representing decreased renal function in the fetus Infants exposed *in utero* to ACE inhibitors should be closely observed for hypotension, oliguria, and hyperkalemia If oliguria occurs, attention should be directed toward support of blood pressure and renal perfusion with the administration of fluids and pressors as appropriate Problems associated with prematurity such as patent ductus arteriosus have occurred in association with maternal use of ACE inhibitors, but it is not clear whether they are related to ACE inhibition, maternal hypertension, or the underlying prematurity

Nursing Mothers. Milk in lactating rats contains radioactivity following administration of ^{14}C enalapril maleate It is not known whether this drug is secreted in human milk Because many drugs are secreted in human milk, caution should be exercised when VASOTEC is given to a nursing mother.

Pediatric Use Safety and effectiveness in children have not been established

Adverse Reactions: VASOTEC has been evaluated for safety in more than 10,000 patients, including over 1000 patients treated for one year or more VASOTEC has been found to be generally well tolerated in controlled clinical trials involving 2987 patients

HYPERTENSION The most frequent clinical adverse experiences in controlled trials were headache (5.2%), dizziness (4 3%), and fatigue (3%)

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in controlled clinical trials were: diarrhea (1.4%), nausea (1 4%), rash (1 4%), cough (1.3%), orthostatic effects (1 2%), and asthenia (1.1%).

HEART FAILURE The most frequent clinical adverse experiences in both controlled and uncontrolled trials were dizziness (7.9%), hypotension (6.7%), orthostatic effects (2 2%), syncope (2 2%), cough (2 2%), chest pain (2 1%), and diarrhea (2.1%).

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in both controlled and uncontrolled clinical trials were fatigue (1 8%), headache (1 8%), abdominal pain (1 6%), asthenia (1 6%), orthostatic hypotension (1 6%), vertigo (1 6%), angina pectoris (1.5%), nausea (1.3%), vomiting (1 3%), bronchitis (1.3%), dyspnea (1.3%), urinary tract infection (1.3%), rash (1.3%), and myocardial infarction (1.2%)

Other serious clinical adverse experiences occurring since the drug was marketed or adverse experiences occurring in 0 5% to 1% of patients with hypertension or heart failure in clinical trials in order of decreasing severity within each category

Cardiovascular Cardiac arrest; myocardial infarction or cerebrovascular accident, possibly secondary to excessive hypotension in high-risk patients (see WARNINGS, *Hypotension*); pulmonary embolism and infarction, pulmonary edema, rhythm disturbances, atrial fibrillation, palpitation.

Digestive Ileus, pancreatitis, hepatitis (hepatocellular or cholestatic jaundice), melena, anorexia, dyspepsia, constipation, glossitis, stomatitis, dry mouth

Musculoskeletal: Muscle cramps.

Nervous/Psychiatric Depression, confusion, ataxia, somnolence, insomnia, nervousness, paresthesia

Urogenital Renal failure, oliguria, renal dysfunction (see PRECAUTIONS and DOSAGE AND ADMINISTRATION)

Respiratory Bronchospasm, rhinorrhea, sore throat and hoarseness, asthma, upper respiratory infection

Skin Exfoliative dermatitis, toxic epidermal necrolysis, Stevens-Johnson syndrome, herpes zoster, erythema multiforme, urticaria, pruritus, alopecia, flushing, hyperhidrosis

Special Senses. Blurred vision, taste alteration, anosmia, tinnitus, conjunctivitis, dry eyes, tearing

A symptom complex has been reported which may include a positive ANA, an elevated erythrocyte sedimentation rate, arthralgias/arthritis, myalgias, fever, serositis, vasculitis, leukocytosis, eosinophilia, photosensitivity, rash, and other dermatologic manifestations.

Angioedema Angioedema has been reported in patients receiving VASOTEC (0.2%). Angioedema associated with laryngeal edema may be fatal. If angioedema of the face, extremities, lips, tongue, glottis, and/or larynx occurs, treatment with VASOTEC should be discontinued and appropriate therapy instituted immediately (See WARNINGS.)

Hypotension In the hypertensive patients, hypotension occurred in 0.9% and syncope occurred in 0 5% of patients following the initial dose or during extended therapy Hypotension or syncope was a cause for discontinuation of therapy in 0 1% of hypertensive patients In heart failure patients, hypotension occurred in 6.7% and syncope occurred in 2 2% of patients Hypotension or syncope was a cause for discontinuation of therapy in 1 9% of patients with heart failure (See WARNINGS.)

Clinical Laboratory Test Findings

Serum Electrolytes Hyperkalemia (see PRECAUTIONS), hyponatremia

Creatinine, Blood Urea Nitrogen In controlled clinical trials, minor increases in blood urea nitrogen and serum creatinine, reversible upon discontinuation of therapy, were observed in about 0 2% of patients with essential hypertension treated with VASOTEC alone Increases are more likely to occur in patients receiving concomitant diuretics or in patients with renal artery stenosis (See PRECAUTIONS.) In patients with heart failure who were also receiving diuretics with or without digitalis, increases in blood urea nitrogen or serum creatinine, usually reversible upon discontinuation of VASOTEC and/or other concomitant diuretic therapy, were observed in about 11% of patients Increases in blood urea nitrogen or creatinine were a cause for discontinuation in 1 2% of patients.

Hemoglobin and Hematocrit. Small decreases in hemoglobin and hematocrit (mean decreases of approximately 0.3 g% and 1.0 vol %, respectively) occur frequently in either hypertension or heart failure patients treated with VASOTEC but are rarely of clinical importance unless another cause of anemia coexists In clinical trials, less than 0.1% of patients discontinued therapy due to anemia

Other (Causal Relationship Unknown) In marketing experience, rare cases of neutropenia, thrombocytopenia, and bone marrow depression have been reported A few cases of hemolysis have been reported in patients with G6PD deficiency

Liver Function Tests Elevations of liver enzymes and/or serum bilirubin have occurred

Dosage and Administration: *Hypertension:* In patients who are currently being treated with a diuretic, symptomatic hypotension occasionally may occur following the initial dose of VASOTEC The diuretic should, if possible, be discontinued for two to three days before beginning therapy with VASOTEC to reduce the likelihood of hypotension. (See WARNINGS) If the patient's blood pressure is not controlled with VASOTEC alone, diuretic therapy may be resumed.

If the diuretic cannot be discontinued, an initial dose of 2 5 mg should be used under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and PRECAUTIONS, *Drug Interactions.*)

The recommended initial dose in patients not on diuretics is 5 mg once a day Dosage should be adjusted according to blood pressure response. The usual dosage range is 10 to 40 mg per day administered in a single dose or in two divided doses In some patients treated once daily, the antihypertensive effect may diminish toward the end of the dosing interval In such patients, an increase in dosage or twice-daily administration should be considered If blood pressure is not controlled with VASOTEC alone, a diuretic may be added

Concomitant administration of VASOTEC with potassium supplements, potassium salt substitutes, or potassium-sparing diuretics may lead to increases of serum potassium (see PRECAUTIONS).

Dosage Adjustment in Hypertensive Patients with Renal Impairment The usual dose of enalapril is recommended for patients with a creatinine clearance > 30 mL/min (serum creatinine of up to approximately 3 mg/dL). For patients with creatinine clearance ≤ 30 mL/min (serum creatinine ≥ 3 mg/dL), the first dose is 2.5 mg once daily The dosage may be titrated upward until blood pressure is controlled or to a maximum of 40 mg daily

Heart Failure VASOTEC is indicated as adjunctive therapy with diuretics and digitalis The recommended starting dose is 2.5 mg once or twice daily After the initial dose of VASOTEC, the patient should be observed under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour (See WARNINGS and PRECAUTIONS, *Drug Interactions.*) If possible, the dose of the diuretic should be reduced, which may diminish the likelihood of hypotension The appearance of hypotension after the initial dose of VASOTEC does not preclude subsequent careful dose titration with the drug, following effective management of the hypotension. The usual therapeutic dosing range for the treatment of heart failure is 5 to 20 mg daily given in two divided doses. The maximum daily dose is 40 mg Once-daily dosing has been effective in a controlled study, but nearly all patients in this study were given 40 mg, the maximum recommended daily dose, and there has been much more experience with twice-daily dosing In addition, in a placebo-controlled study which demonstrated reduced mortality in patients with severe heart failure (NYHA Class IV), patients were treated with 2 5 to 40 mg per day of VASOTEC, almost always administered in two divided doses. (See CLINICAL PHARMACOLOGY, *Pharmacodynamics and Clinical Effects.*) Dosage may be adjusted depending upon clinical or hemodynamic response (See WARNINGS)

Dosage Adjustment in Patients with Heart Failure and Renal Impairment or Hyponatremia: In patients with heart failure who have hyponatremia (serum sodium < 130 mEq/L) or with serum creatinine >1 6 mg/dL, therapy should be initiated at 2.5 mg daily under close medical supervision. (See DOSAGE AND ADMINISTRATION, *Heart Failure,* WARNINGS, and PRECAUTIONS, *Drug Interactions.*) The dose may be increased to 2 5 mg b.i.d., then 5 mg b i.d. and higher as needed, usually at intervals of four days or more, if at the time of dosage adjustment there is not excessive hypotension or significant deterioration of renal function. The maximum daily dose is 40 mg

For more detailed information, consult your MSD Representative or see Prescribing Information, Merck Sharp & Dohme, Division of Merck & Co., INC., West Point, PA 19486 J9VS61R2(819)

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VASOTEC is generally well tolerated and not characterized by certain undesirable effects associated with selected agents in other antihypertensive classes.

VASOTEC is contraindicated in patients who are hypersensitive to this product and in patients with a history of angioedema related to previous treatment with an ACE inhibitor.

A diminished antihypertensive effect toward the end of the dosing interval can occur in some patients.

For a Brief Summary of Prescribing Information, please see the last page of this advertisement.

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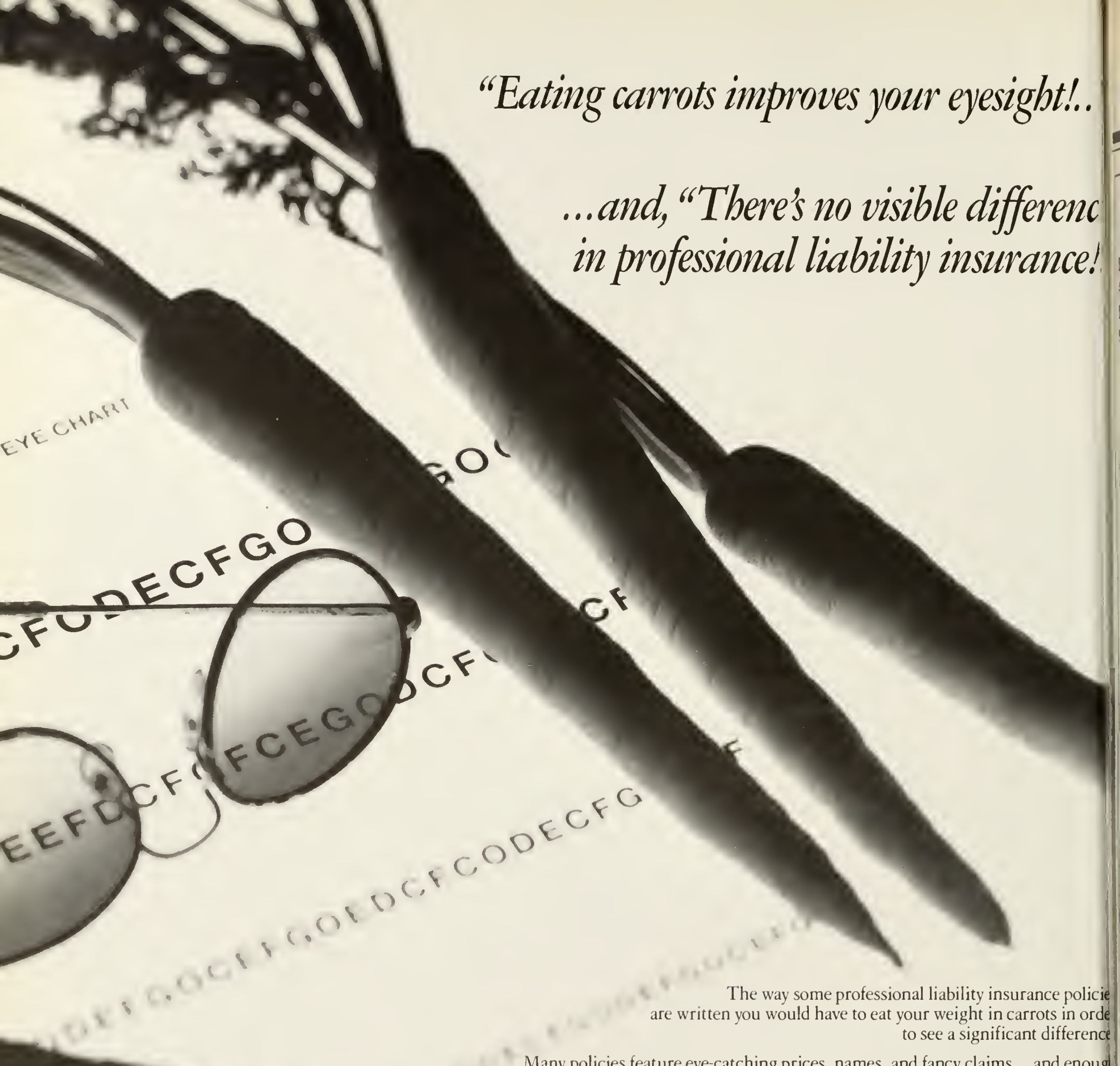

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"Jefferson City Farmers' Market," is an original watercolor painting by **Lucy Sjoblom,** a freelance artist from Jefferson City, MO. Mrs. Sjoblom recently received first place for watercolors in the Adult Art Exhibit held in Jefferson City. Cover photo by Lloyd Grotjan.

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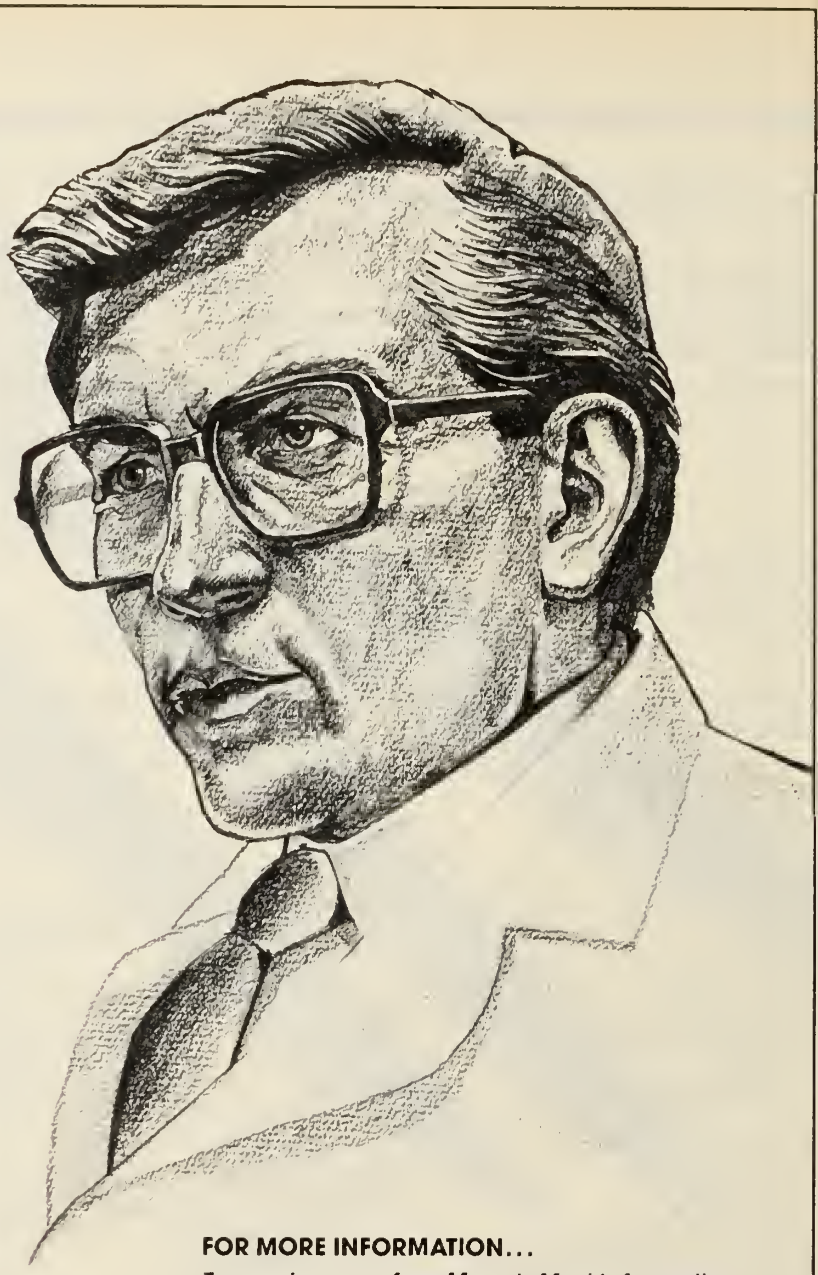

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87, No.5 *Journal of the Missouri State Medical Association* May 1990

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GUEST EDITORIAL

by John C. Hagan, III, M.D., F.A.C.S.

Medical writing is a skill that requires work and perseverance. The trick is just getting started.

Do the "Write" Thing: Create a Scientific Paper

Physicians in academic medicine accept this credo as an implicit part of their job description. Scientific writing is one of the most important aspects of achieving tenure and full professorship and staying in the academic fastlane. For most private practitioners, their entire professional career is spent without attempting to publish a single scientific article. It is as if their credo is: "Publish? Perish the thought."

Compared to academic physicians, private practitioners provide care for more patients, perform more surgery and have better continuity of care. They are in an excellent position to add valuable contributions to the literature. Collectively, the most beneficial aspect of increased participation in medical writing by private practitioners would be the expansion of medical knowledge.

Scientific writing can add a new, creative and intellectually satisfying aspect to private practice. The research and study, which are part of preparing an article, are professionally stimulating and count toward continuing medical education requirements. Medical scholarship is universally appreciated by physicians, and a respectable bibliography enhances one's professional credentials and reputation.

The most sophisticated of contemporary medical research and writing involve large, multicenter, prospective, controlled studies. There are numerous alternative ways of conducting clinical research or writing for publication. These include: case reports, review articles, reports of new techniques or modifications of existing techniques, retrospective studies by chart review, prospective studies, and development of new instruments. The correspondence sections of medical journals are widely read and provide a way to comment on published articles.

Worldwide, there are more than 19,000 bio-medical journals. The most competitive, such as the *New England Journal of Medicine*, accept only a small percentage of submitted papers. Matching your article with a journal that accepts the type of article you wish to write greatly increases the likelihood of getting the article published. The journals of the state medical associations, specialty societies and regional societies often give preference to their members' articles.

Other publication strategies include writing for other than one's own specialty. Examples of this would be a neurologist reviewing childhood migraine in a pediatric journal or a cardiologist reviewing indications for coronary artery angiography for family practitioners. Such articles may "plow no new ground" in your particular specialty, but they can be educational to physicians interested in current developments in areas of expertise other than their own. Articles of a basic or review nature are eagerly sought by journals published specifically for fellows, residents and medical stu-

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dents. Other health professionals, such as nurses, have their own journals and these often solicit physician-written articles.

Medical writing is a skill that requires work and perseverance. Good writing is not an innate talent. Several short, well-written, easily understood texts[1-6] are available on the craft of scientific writing. The AMA's "Manual of Style" is a valuable reference on grammar, form, abbreviations and the mechanics of manuscript construction.

Other essentials for the novice writer are a good working relationship with a medical librarian for literature searches and obtaining published articles and a patient typist with a word processor. Statistical analysis is often easily and inexpensively obtained from the Statistics Department of local universities.

If your paper is rejected, don't take it personally. Usually the reviewers add valuable comments and suggest improvements or revisions which may make the article acceptable for publication. If the article is rejected outright, the reviewer usually explains the decision. Such articles can often be rewritten, using the reviewer's suggestions and then being resubmitted to a less demanding journal.

I encourage the silent majority of *Missouri Medicine* readers to become writers for this and other scientific journals. Maybe you're made of the "write" stuff.

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Editor's Note: Dr. Hagan, an ophthalmologist, is in full-time private practice in Kansas City, Missouri. He has published more than 45 scientific articles.

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GUEST EDITORIAL

by Philip C. Anderson, M.D.

The introduction of the Hubble Space Telescope might be just what the doctor ordered to restore the childlike wonder in today's future physicians that caused so many of us to pursue a career in medicine.

Hubble Space Telescope

This year the E.B. Hubble Space Telescope will be placed in orbit, beginning a new era in investigation of the heavens. Like fish trying to look out of a pool, for all these centuries humans have been squinting through telescopes from our atmosphere at twinkling, obscured faint bits of starlight. With the Hubble Telescope up *above* our atmosphere, the detectors can read gamma rays and radio waves as neatly as light. It can intensify faint images or take high speed clear photographs of unprecedented clarity.

Knowledge of the heavens has always stimulated the imagination and challenged the best thinking in science. We expect the Hubble Telescope to cause the greatest commotion since the voyage to the moon, however, the elaborate sustained collection of data is the strength of this project.

In the 1920's, Edwin P. Hubble recognized that our universe was composed of clusters of galaxies and that these are speeding away from each other at a great velocity. His discoveries expanded our ideas of Newtonian gravity and Einstein's relativity. In the 1960's, using technology from the Second World War, astronomers found black holes and radio-emitting neutron stars. New interest has been directed to the extremely active nature of the universe — not all the "unchanging heavens." The Hubble Telescope should be 50 times better than the best prior telescope.

Many physicians developed their interest in science and mathematics with a telescope. The Hubble Telescope will be a cylinder about 43 X 14 feet, weighing 12 tons. The first objective of the telescope will be to revise the star catalogue and map. Other important questions include whether there are other planets around other suns (Beta Pictoris, perhaps), and general problems concerning the age and size of the universe. Close attention will be paid to the (still controversial) black holes. It is in the human spirit to investigate, and we feel great excitement when we succeed. The unveiling of this Hubble Telescope promises to be a grand event. ■

Editor's Note: The $1.5 billion Hubble Space Telescope, was set to launch Tuesday, April 10, aboard the space shuttle Discovery. It will spend 15 years examining the universe in finer detail than can any ground observatory. Astronomers hope the 12½-ton telescope will be able to help answer fundamental questions about the size, age and formation of the distant stars and galaxies.

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EDITOR'S DESK

by Donald G. Sessions, M.D.
Editor

Notes From Egypt

I take off from New York's John F. Kennedy Airport at 11:00 p.m. on EGYPTAIR arriving in Cairo at 5:00 p.m. the next afternoon. Fourteen million people are unaware of my arrival, including the person who was to meet me at the airport. My name appears on no small sign board. "Shakreen," I think to myself, "so much for promises from the embassy." I'll just have to get to Alexandria on my own. After exchanging some dollars for pounds, I am approached by a smooth talking man who seems to sense an easy mark. "Bitkallam ingleeezl," I ask. "Not to worry," he replies. He is happy to get a car and driver for me for the trip down the road to Alexandria. I am aware that his is a 7000-year-old tradition of bargaining. We agree on a price, and I am escorted to a car. "Khudni 'al otel," I say, and off we go.

Cairo is beginning to darken and as we leave the airport, I remember that Egyptian drivers are among the world's most exciting. They make Italian drivers appear to be compulsive slow-moving beginners. The idea is to position your car on the outside or inside bumper of the car in front of you with only half an inch to spare. You then floor the car while constantly beeping lightly on the horn to let the other drivers know you are there. This is combined with major league weaving and darting in and out of the flow of traffic. If a small opening appears between two cars in front of you, it is standard practice to accelerate into that spot as fast as is humanly possible. I learn to just close my eyes and tense my body in preparation for the impending crash, but somehow we remain untouched. A horse-drawn cart appears suddenly, galloping at full speed and veering just to our left. The ride takes on the festive aspects of a Fellini movie.

We near the outskirts of Cairo and my driver, who speaks little English and smokes something that smells like dead rope, turns the car sharply into a gas station. He announces that he'll need some of the fare for gas for the four-hour trip.

After my all-night flight, I am beginning to get spacey. We follow the Nile on the river road instead of taking the desert road to Alexandria. I'll have to see the Pyramids on my way back. Outside it is pitch black. My driver, as well as the other drivers on the road, conserves his headlights by not using them. Headlights are turned on only when a head-on crash is inevitable, and then only to blind the oncoming driver for a few seconds.

My driver informs me that a baby is born in Egypt every 21 seconds. I am not sure how to respond to this data. He feels strongly that not having electric lights in some of the homes may have something to do with the birthrate. I think back to my sixth grade health class and come up with a topic for a different conversation.

We arrive at Alexandria. Egypt's second-largest city, it is 110 miles northwest of Cairo on the Mediterranean Sea. It is also the country's chief port. My driver lets me off at the wrong hotel. I obtain the name of the hotel where my meeting is being held; it is just a few miles down the Cor-

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niche. Of course, I'll need to get there by cab, and as luck would have it, I am out of pounds. The desk clerk at the hotel informs me that I must wait until the next morning for the banks to open in order to exchange more dollars. We finally find a way around this Catch-22, and I eventually fall into bed cuddling my bottled water at the correct hotel.

I am a guest faculty member at an international meeting on cancer of the nose and paranasal sinuses sponsored by the University of Alexandria Medical School. Alexandria was founded, we are told, by Alexander the Great of Macedonia in 332 B.C. on the site of the tiny fishing village of Rakotis facing the rocky island of Pharos. It sits on the northern shore of the country on the Mediterranean Sea just west of the Nile delta. There are 4,000,000 people living in the city. My mind clinks like a cash register, as I picture newborn babies swelling the population every 21 seconds.

The meeting begins early the next day with formal introductions. The meeting room is packed with local dignitaries and specialists from all over the region — from Alexandria and Cairo, from Kuwait and Saudi Arabia, even from Libya. In the morning, I present a talk and lead a panel discussion. In the afternoon I chair the program. Talks by guest faculty members from England and West Germany are interspersed with presentations by Egyptian professors. The discussions are lively. We might just as easily be in Chicago.

The meals are large and start with bread dipped into four of the five kinds of Eyptian appetizers. My favorite is *tahina*, which is pressed sesame seeds. I learn from my host that it is mostly cholesterol. No wonder it tastes so good. Beef and lamb are the choice meats, and there is always a sweet dessert. It's really fun to be so bad. There is bottled water at each meal and no alcohol is served.

With a friend, I walk down nearby streets from our luxury hotel late in the afternoon. Nothing prepares us for the ensuing sensory overload. We stick out in the crowd like Martians. Dark-eyed children stop their play to stare at us. The number of people is unbelievable, yet their numbers do not affect their manner. They are quietly friendly. We pass an open air meat market where a large side of beef hangs. I notice the anatomical similarity between cattle and human larynges. Why don't I ever have my camera when I need it?

The owner of a sausage market spies us. "What country?" he asks. "United States," we reply. "What is the capitol?" he asks. "Washington," we reply. "Oh, Americans, welcome," he says with a big smile. We feel welcomed.

There is background noise of talk, music (Arabian rap), cars and children. Evening prayer blares from a nearby mosque. The most overwhelming phenomenon is the smell. It is a combination of diesel fuel, sweat, flowers and the fetid odor of garbage — which is constantly changing. The smell is so strong you can taste it.

Each day on television, there is a program in arabic discussing the dangers of the snails and the parasites living in the Nile waters and its side canals. The point is made clearly that these parasites can enter the body through the skin. Despite the warning, we pass men working and children playing in these water systems. It's apparently hard to fear something that you cannot see. Advanced bilharzia is a common affliction.

There is great interest in the conference regarding the latest technological advances. There are several CT scanners in town but no MRI machines. In the presentations from the new world there are details about the latest CT and MRI findings. The participants are fully involved and listen with great concentration.

There are indepth discussions about delicate and technically advanced base of skull surgery. Reconstructive procedures requiring free flaps with microvascular anastomoses are discussed in minute detail. Some of the Egyptian professors have had training in either Europe or the United States. They are given credit for this by their local peers. This also separates them.

I talk with a doctor from Ben-Gazzi, Libya. I find that we have similar interests and are more alike than different. He is pleased that the Libyan-Egytian border has recently been opened, as this has made it easier for him to attend the conference. He works as a specialist in a hospital and is allowed a small non-surgical private practice. He has the same hopes for the future that I do.

I enjoy talking to the residents about their training. They enter medical school after the equivalent of our high school. They graduate after six years with a bachelor's degree in medicine. If they are able to get a postgraduate training position then they will work toward a master's degree. They can then earn a doctorate in medicine after completing a rigorous thesis. This may take six to eight years. The medical courses are taught in English.

I am inspired by the opportunity afforded by the conference. I am certain that I am learning more than they are — but probably in different domains. I am aware of the existing gap between their way of life and ours. Nothing approaches the value derived from authentic interchange. I come home a different person — and the same. ■

President's Page

by Gary A. Dyer, M.D.
MSMA President

For MSMA to be successful with the legislature this year and next, we need professional lobbyists working as in the past and a more vigorous MSMA grassroots physicians lobby working both at home and at the state level.

MSMA 1990-91: A Year of Impact or Impaction?

The mission of the Missouri State Medical Association is to serve its members through promotion of the science and art of medicine, protection of the health of the public, and betterment of the medical profession in Missouri.

In 1987, a Strategic Planning Committee was appointed, and the major part of a year was spent fine-tuning the mission of MSMA and re-developing the Strategic Plan of the Association. A random sampling of the membership was conducted as part of the study. Nearly every fourth member was involved, and as a result, the sampling mirrored the membership exactly except for selected surgical subspecialties.

As part of the survey, physicians were asked to identify the most important service or activity provided by MSMA to the membership. Four items made up 87% of the response, with the first two alone accounting for 63%. They were:

1. Lobbying Missouri legislators – 45.9%
2. Organizing physicians for grassroots political action – 17.8%
3. Helping physicians deal with the third party payors – 12.5%
4. Disciplining the professional misconduct of physicians – 11.7%

The remaining 11 responses added together made up less than 12% of the total and included such items as: 1) Participating in Missouri's PRO (2.9%); 2) Administering a public relations program (2.9%); and 3) Operating an impaired physicians program (1.9%). Offering CME was listed most important by only 0.8% of respondents.

It is my view that the number one service to members, lobbying the Missouri legislature, is what MSMA does best. Cork Swarens, Tom Holloway and Royal Cooper, with direction from the Legislative Committee and the Council, provide legislators with excellent scientific background and persuasive arguments through written testimony. Qualified physicians are selected to testify at hearings and provide oral testimony to back up written positions. As a result our lobbying efforts are rated excellent by legislators.

In this day and age, however, professional lobbying is not enough. The legislature is not the same as in years past when our association could deal primarily with party leaders. Independent thinkers now make up a larger percentage of the legislature. They respect the MSMA lobby, but are more interested in the views of physicians back home. With many more individuals wanting a piece of the health care pie, with increasing costs of medical care, and with finite resources, the individual legislators are assessing all data from constituents as well as professional lobbyists.

For MSMA to be successful with the legislature this year and next, we need at least a two-pronged attack, professional lobbyists working as in the past, and a more vigorous MSMA grassroots physicians lobby working both at home and at the state level.

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President's Page

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The Strategic Plan of 1987 was designed as a 3-5 year plan, but with rapid changes and developments in medicine, yearly, and sometimes more frequent adjustments are needed. Suggestions for changes and additions developed by the recently convened Planning Committee will be brought before the Council at its next meeting. Resolutions passed at the recent 132nd Session of the MSMA House of Delegates will be scrutinized for stategic planning purposes.

Your personal views and suggestions are also very important. Should you have new ideas that would help our association carry out its mission in a more effective manner, please do not hold them back. Share them with us now by writing our office in Jefferson City. Let's make 1990-91 a year of impact for MSMA – not a year of impaction. ■

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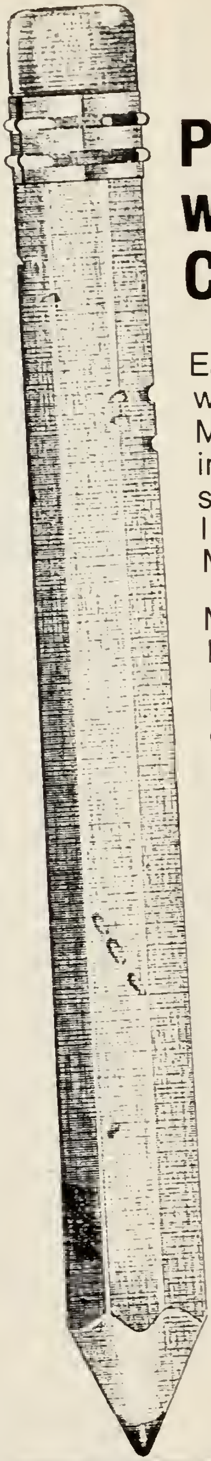

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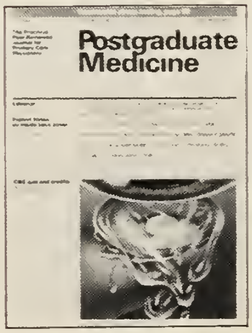

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Auxiliary Message

by Carol Sparkman
MSMAA President

> *Whatever success we have as an Auxiliary, when you get right down to it, is based on only one thing: Individual Action. One person* **can** *make a difference.*

Together We Face the Future, Together We Are the Future

When I was nominated as President-Elect of the Missouri State Medical Association Auxiliary, a friend told me that I was about to embark on a very special journey. How right she was!

That journey has been a long and sometimes difficult one, but it has always been an exciting one. And I am looking forward to what is ahead of me down the road.

I want to thank each and every one of you for letting me take this journey. It is a great honor to be selected to serve as President of the MSMA Auxiliary. It is also a very great responsibility. I humbly accept both. In fact, I welcome the opportunity to work with what I consider to be one of the finest volunteer organizations in the state. And I am eager to face the future with you as together we meet the challenges which lie ahead of us. I pledge you my best effort.

Entering this office I am reminded of the story about the old man who took upon himself the task of putting the starfish back into the sea. Each morning he would get up early and as he walked along the beach he would pick up starfish and fling them into the ocean. One day a boy who happened to see this became curious and asked the old man what he was doing. The man explained that the starfish would die if they were allowed to remain in the heat of the sun, so he was returning them to the water so they could survive. The boy thought a moment and then said, "But the beach goes on for miles and miles. There must be thousands of starfish. How can your efforts make any difference?" The old man smiled, looked down at the starfish in his hand, threw it safely into the waves, and replied, "Well, it sure does make a difference to this one!"

There are a couple of lessons in that story for all of us. First, it reminds us that we can make a difference, even if we're not always able to reach great numbers of people. Even if you touch only one person, your impact, on that person, is enormous. The difference you make for the citizens of your community is significant. You do make your mark. You do play an important role in helping the medical profession meet the challenges facing it.

The other lesson of that story is that whatever success we have as an auxiliary, when you get right down to it, is based on only one thing: individual action.

You know, we often get in the habit of using the names of large organizations and institutions as though they were real and had a life of their own when they are really only convenient abstractions or labels used to represent countless numbers of people acting individually. We all do it. We say the White House issued a statement. Or the Church took a position. Or the legislature passed a law. But in each and every case these things happened because one person, like that man on the beach, or a group of persons acting together, did something. The work of any large organization is fundamentally the result of individual

continued on page 284

■ Auxiliary Message

continued from page 283

actions multiplied many times over. Organizations can't act. Only people can act. We can never forget that. Without you there is no MSMA Auxiliary. It takes all of us working hand-in-hand to successfully carry out our projects. That's why we must commit ourselves to do our very best at every task.

And that's also why I'm concerned about membership. As you know, it's gone down over the last few years. And, ironically, this decline comes just at the time when medicine is under assault: assault from government, from special interest groups, and even ordinary citizens who, though they are still loyal to their own doctor, have an increasingly negative image of the profession as a whole. Who will defend the physician against this assault? We shall! We are left with no choice. But in order to do that we must find ways to better meet the needs of our members and to increase our membership. Your auxiliary needs you now more than ever before. And we need all of you. Of course, you cannot volunteer for everything all of the time. I know that. But we must have your continuous membership and financial support.

One thing we will do again this year to help us meet our membership goals is to conduct another Leadership Training Workshop. It will be held on August 23rd and I urge all of you to attend and to urge your friends to attend as well.

Increasing membership is not an end in itself. I want to see our organization grow because I know that is the only way for us to meet our goals and to successfully face the future.

That's why I've selected "Together We Face the Future — Together We Are the Future," as my theme for my term of office. Let me tell you some of the goals I have for this coming year as we face the future together.

First, I want to see us do more to promote health objectives for our youth. Our Health Projects' focus for 1990-91 will center on the idea that education of our youth is the key to dealing with many of our health related problems like substance abuse and the spread of AIDS. The AMA is developing a new program called Healthier Youth for the year 2000. The objectives of the program will involve such issues as improving nutrition, reducing tobacco use and substance abuse, encouraging responsible sexual behavior, and improving physical fitness. I ask you to support Healthier Youth for the Year 2000 in your community.

Second, I would like to continue to foster strong working relationships between all county medical societies and their respective auxiliaries. When the county medical society approaches you, I hope you will be receptive to joint projects. One example is Dr. Gary Dyer's request that the auxiliary help with Voter Registration. We need to get not only our medical families but all eligible voters registered. Because of the increase in health related legislation at both the state and federal level, it is more important than ever for all of us — physicians, auxiliary members, and concerned citizens — to be involved.

Third, I would like to continue our efforts to raise funds for the American Medical Association Education and Research Foundation. I don't need to tell you that our medical schools need our financial support. And what is more, they deserve it. After all, when we raise funds for medical education we not only help to insure the quality of health care in the future, but it's our opportunity to give back a portion of what we have received from medicine. And I suspect that monies which come from friends and families of medicine have a special meaning for those who receive them. Therefore, I'd like for each county to continue with the Holiday Sharing Card, a great way to raise funds for education and research. And if your auxiliary hasn't tried this approach, I urge you to consider it because you are the key to our national philanthropic endeavors.

These are some of my goals for this year and for the future of our auxiliary.

The future, after all, is not really very far away. In fact, it's already upon us. A student enrolling in college today to study medicine will just be finishing his or her internship in the year 2000. We must face the future, one way or another. We have no choice. That's where you and I are going to spend the rest of our lives.

I ask for your help as we face that future together. And I know you will give it to me. This year will go quickly. Let us each make a fast start and serve with enthusiasm and joy. With your support and your prayers, together we can look forward to tomorrow's challenges. Together we can face the future, for together we truly are the future. ■

PRACTICE MANAGEMENT

by Janice K. Woerth, Ph.D.

Do you have a question for Dr. Woerth? Include your questions along with your name, address and phone number and send them to:

Janice K. Woerth, Ph.D.
Practice Management
c/o Missouri Medicine
P.O. Box 1028
Jefferson City, MO 65102
Or call her direct:
816/587-1125

*Although your name will **not** be used in the journal, please include your name and phone number so that Dr. Woerth may contact you if she needs additional information to answer your question.*

Dear Dr. Woerth:

I am curious as to how a medical office should bill for emergency room codes. In the CPT book there are codes for Emergency Department Services (90500-90580). Are we to be using these codes?

R.G.

Dear R.G.:

The codes you referred to are for physicians who are assigned by the hospital to the emergency room. For physicians who are not assigned by the hospital to the emergency room, the correct codes to use are the newly entitled Office and Other Outpatient Medical Services Codes (90000-90080) and the appropriate emergency care facility service code (99062-99065) found on page 61 of the 1990 CPT book.

Notice that code 99062 is for emergency care services provided by the physician who is already at the hospital. Code 99064 is used by the physician who is called to the hospital to provide emergency care services not during his/her regular office hours. Finally, code 99065 is used by the physician called to the hospital for emergency care services during his/her regular office hours. These codes need to be used in addition to basic services rendered as specified in the note at the begining of this Special Services and Reports section of the CPT book. In other words, they are used with office visits and other appropriate procedure codes, noting on the claim that the place of service was the emergency room.

Dear Dr. Woerth:

The nurse in our office provides some medical services to patients when the doctor is not in the office. These services include injection, blood pressure checks, etc... Is there any way we can charge the patient (especially the Medicare patient) for these services?

L.D.

Dear L.D.:

Yes, these services performed by a nurse can be charged to the patient, including Medicare patients. The CPT code 90030, minimal office visit, should be used for billing these services to insurance companies. In the introduction section of the CPT (page xx in the 1990 CPT), the definition of a minimal office visit is given. Please notice that this minimal level of service requires only the supervision of a physician and does not require his/her presence.

I recently recommended use of this code to one of my clients in Kansas City who had never charged for these minimal services performed by a nurse. They found that Medicare reimbursement was $9.00 for these services. Charging for these services has generated an additional $54 per week, or assuming a 50-week work year, $2700 annually in their office.

In the CPT book, note in the section titled Immunization Injections (page 12 in the 1990 CPT), we are instructed to charge a minimal service in addition to an injection, if this is the only service rendered. I have found that some of my clients are reluctant to charge for this minimal level of services because they feel it results in a total fee that is excessive for services rendered that day. I believe that if a reasonable and fair fee is set for each procedure in a medical office and the patient's condition requires multiple procedures, the tabulation of all the individual fees should result in a total charge that is reasonable and fair. ■

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SPECIAL SERIES

Viral Infection and HIV Disease

Thomas C. Bailey, M.D.
St. Louis, Missouri

HIV-positive patients are at risk for a number of serious viral infections. The author presents on overview of some common viral infections these patients are susceptible to and stresses the importance of early diagnosis for appropriate treatment.

The cell-mediated and humoral immune deficits in HIV-infected patients result in increased susceptibility to a host of infectious agents, including a number of viruses. The herpes group: Herpes simplex I and II (HSV I and II), Varicella zoster (VZV), cytomegalovirus (CMV) and Epstein-Barr virus (EBV) contribute substantially to HIV-related illness and are the primary subject of this article. Infection with HIV also predisposes patients to progressive multifocal leukoencephalopathy, molluscum contagiosum, warts and possibly influenza. These viral conditions are discussed in lesser detail.

Herpes Simplex (HSV)

Herpes simplex virus is a neurotropic virus that can establish latency in sensory ganglia. Recurrent outbreaks occur when the latent virus is reactivated. The majority of herpes infections in adult patients with AIDS, particularly gay men, are due to reactivation.

The virus is the most common cause of nongonococcal proctitis in sexually active gay men. This is usually the result of primary infection but can occur through viral reactivation and is characterized by anorectal pain, constipation and tenesmus. Occasionally, HSV proctitis is complicated by sacral plexopathy resulting in temporary impotence and urinary retention. Ulcerations, vesicles or friable mucosa are seen on anoscopy or sigmoidoscopy. Viral cultures are generally positive for the virus.

Recurrent genital and perianal HSV infections are characterized by painful ulcerations which may coalesce to form deep, poorly healing, atypical lesions. In the presacral area these may even be mistaken for decubitus ulcers. Therefore, all genital and perianal ulcerations should be cultured for virus to rule out HSV. The differential for these ulcerative lesions includes syphilis, chancroid, lymphogranuloma venereum, CMV and granuloma inguinale, among others.

Esophagitis due to HSV can cause either acute or chronic retrosternal pain and odynophagia. It is clinically and radiographically indistinguishable from candida or CMV esophagitis and typical oral ulcerations may be absent. Therefore, definitive diagnosis can be made only by esophagoscopy with specimens taken for culture and histology. However, patients who have symptoms suggestive of esophagitis should first be empirically treated with ketoconazole, particularly if oral thrush is present. If symptoms persist after a course of ketoconazole, endoscopy should be performed to rule out HSV or CMV infection.

In AIDS patients, HSV encephalitis is infrequent. When it occurs, it may be synchronous with CMV encephalitis. Symptoms are nonspecific and may be quite different from the fulminant form of encephalitis seen in the immunocompetent patient, with the gradual onset of fever, headache, meningismus or personality changes. Because central nervous system (CNS) lymphoma and a number of opportunistic infections including cryptococcal meningitis, toxoplasma encephalitis, nocardia and progressive multifocal encephalopathy cause similar symptoms, aggressive measures are warranted to evaluate CNS symptoms in the HIV-infected patient. These tests include lumbar puncture, CT scanning with contrast or magnetic resonance imaging (MRI). (See *Missouri Medicine*, March 1990.)

The treatment of choice for HSV infections is acyclovir. Primary or recurrent mucocutaneous HSV can usually be managed with outpatient oral therapy, 200 mg five times daily, initiated empirically while awaiting culture confirmation. Intravenous acyclovir is indicated for severe mucocutaneous infection, visceral involvement, neurologic complications including sacral plexopathy or intolerance of oral acyclovir. In patients with normal renal function the dose of intravenous acyclovir for severe mucocutaneous infection is 5 mg/kg every 8 hours. For encephalitis or visceral involvement, including esophagitis or proctitis, the dose is 10 mg/kg every 8 hours. These doses require adjustment if renal dysfunction is present. The minimum course of therapy is 10 days but patients are often slow to respond and may require longer courses. Acyclovir therapy should be continued until all lesions have healed.

AIDS patients who have frequent mucocutaneous recurrences of HSV usually benefit from long-term suppression with oral acyclovir at a dose of 200 mg three times daily or 400 mg twice a day. Breakthrough recurrences can generally be managed by increasing to full doses. Patients who fail to respond may be absorbing acyclovir poorly or may have acquired an acyclovir-resistant strain. A trial of intravenous acyclovir for severe involvement may be warranted while awaiting results of sensitivity testing. Acyclovir resistant strains may respond to vidarabine at a dose of 15 mg/kg per day. The sensitivity of subsequent viral isolates should be determined since sensitivity to acyclovir may return while the drug is withheld.

Varicella Zoster (VZV)

Like HSV, VZV is a neurotropic virus which establishes latency after primary infection. Primary infection is manifested by varicella (chicken pox) and reactivation is manifested by zoster (shingles).

Primary infection (varicella) in an HIV-infected patient carries a high risk of visceral dissemination, which may be life-threatening. Therefore, HIV-infected patients without a previous history of varicella (FAMA negative) who come in contact with the disease should receive VZV immune globulin (VZIG) for prophylaxis. If such a patient develops varicella, aggressive therapy with high dose intravenous acyclovir is warranted.

The most common manifestation of VZV in HIV-infected patients is zoster, which occurs with increased frequency in these patients and may be recurrent. Zoster in an otherwise asymptomatic HIV-infected patient may be a harbinger of progressive immunosuppression and advancement to clinical AIDS.

A number of complications may result from zoster. Visceral dissemination can occur but is much less common than in varicella. Patients with zoster on the tip of the nose should be examined by an ophthalmologist because of the possibility of zoster keratitis which, if left untreated, can result in anterior uveitis, scarring and permanent visual loss. Encephalitis is an occasional complication of zoster, occurring up to three months after an episode and causing fever, headache, nausea, vomiting, diminished level of consciousness or cerebellar findings.

The diagnosis of varicella or zoster is generally made on clinical grounds. Varicella is characterized by a widespread vesicular eruption on an erythematous base, occurring in crops in all stages of development, classically described as "dew drops on a rose petal." Zoster is often heralded by radicular pain followed by a vesicular eruption involving one to three dermatomes. The vesicles can be unroofed and cultured or examined for the presence of multinucleated giant cells in a Tsanck preparation. Cultures are less likely to be positive than in HSV infection and take longer to grow. For this reason, direct immunofluorescent staining of vesicular scrapings is recommended for confirmation of the diagnosis, if needed.

Virtually all HIV-positive patients with VZV infection should be treated with acyclovir. Varicella or zoster with cutaneous or visceral dissemination warrants intravenous therapy at 10 mg/kg every 8 hours in patients with normal renal function. Treatment is continued for 10 days or until all lesions are crusted. Localized zoster can be treated with high dose oral acyclovir at 600-800 mg five times daily. Acyclovir resistant zoster has been recently described in AIDS. The lesions have a characteristic bizarre verrucous appearance and may respond to vidarabine.

Cytomegalovirus (CMV)

Roughly half of all adults have serologic evidence of CMV infection. The seroprevalence in gay males approaches 100%. Primary infection generally occurs in childhood or young adulthood and is either completely asymptomatic or characterized by a mild "flu-like" illness or mononucleosis syndrome. Like all herpes group viruses, CMV establishes latency after primary infection and may reactivate either spontaneously or in an immunosuppressed state. These reactivations are usually asymptomatic in both normal and HIV-infected patients. However, serious CMV disease with end-organ damage, such as retinitis or gastrointestinal (GI) tract involvement, may occur in patients with AIDS and is generally reflective of end-stage disease.

Cytomegalovirus retinitis usually presents with indolent, painless, unilateral visual blurring or field defects. All HIV-infected patients with these symptoms should be examined by an ophthalmologist experienced in making the diagnosis of CMV retinitis because a number of other conditions may mimic it. Left untreated, blindness will result through progressive retinal necrosis. Retinal detachment may also occur and should be suspected in patients with sudden visual changes.

The virus can infect the GI tract, causing esophagitis, gastritis or colitis. Hepatitis and pancreatitis have also been described. Colitis is the most common GI tract manifestation and is characterized by crampy abdominal pain and diarrhea. Untreated, CMV colitis usually runs a prolonged, indolent course. However, some patients develop fulminant hemorrhagic colitis or perforation. Occasionally perianal lesions occur as a cutaneous extension of CMV proctocolitis, mimicking HSV.

The diagnosis of CMV in the GI tract necessitates the use of endoscopy with biopsy to look for characteristic histologic changes and culture for CMV. Because even normal-looking mucosa may be positive for CMV on histologic or culture examination, "blind" biopsy is merited in a patient with a compatible clinical picture.

Patients with CMV retinitis and GI tract involvement generally benefit from therapy. Clinical entities in which the value of treatment for CMV is less clear include CMV pneumonitis, encephalitis, adrenalitis, and a wasting syndrome associated with CMV viremia.

The current treatment of choice for CMV retinitis or GI tract involvement is ganciclovir. Although there have been recent reports of CMV resistance to ganciclovir, this is uncommon and usually appears after prolonged therapy. Ganciclovir can stabilize the progression of retinitis but does not cure, so patients usually require life-long maintenance therapy. Gastrointestinal tract disease may not require maintenance therapy. Because its major toxicity is myelosuppression, which compounds the toxicity of zidovudine (AZT), these drugs cannot usually be administered concurrently. The standard "induction" course is 5 mg/kg twice daily, in patients with normal renal function, continued for 14 days, then followed by maintenance of 6 mg/kg daily, five days per week. Adjustment for renal dysfunction is necessary. The dose should also be reduced for patients whose neutrophil count is less than 800. The drug should be withheld when the neutrophil count is less than 500. For those patients with CMV retinitis who cannot tolerate systemic ganciclovir, intravitreal administration is an option.

For patients who have progressive CMV disease on ganciclovir, those who have a documented ganciclovir resistant strain or those who cannot tolerate ganciclovir due to myelosuppression, the investigational drug, foscarnet, may be an option. Trials with this drug are now being done. Its major side effects are reversible nephrotoxicity, hyper- or hypocalcemia, and seizures. Trials are also underway using granulocyte-macrophage colony stimulating factor (GM-CSF) to ameliorate or prevent ganciclovir-induced neutropenia.

Epstein-Barr Virus (EBV)

Infection with EBV occurs in the majority of the general population during childhood or early adulthood. The virus has a tropism for oral epithelium and B lymphocytes and regularly establishes latency. In HIV infection, a strong relationship has been established between EBV infection and high-grade lymphoma, lymphoid interstitial pneumonitis (seen most commonly in children) and hairy leukoplakia. There is also some evidence that EBV may play a role in the immune dysfunction of AIDS. Antiviral therapy with acyclovir is effective only for hairy leukoplakia, but treatment is not recommended unless symptoms are present.

Progressive Multifocal Leukencephalopathy (PML)

This is an unusual progressive demyelinating disease of cerebral white matter caused by JC virus, probably as a result of reactivation of latent infection. It usually causes mental status changes or focal neurologic deficit without fever, headache, seizures or cerebrospinal fluid abnormalities. Computerized tomography scans may reveal hypodense lesions in the white matter but MRI is more sensitive and reveals characteristic high signal lesions on T2 weighted images. An HIV-infected patient who has the clinical syndrome and corroborating MRI findings generally does not need a brain biopsy to establish the diagnosis. Prognosis is poor, with most patients dying within one to six months of diagnosis. No established treatment is available. Anecdotal reports say cytosine arabinoside has caused transient improvement in some patients but spontaneous improvement has also been reported.

Molluscum Contagiosum

This is a common cutaneous infection caused by a poorly characterized poxvirus. It is manifested by multiple pearly, waxy, papular lesions, one to 4 mm in diameter, often with a central umbilication. In HIV-infected patients, the lesions are more widespread, larger than in normal hosts and may reach 1 cm in diameter. They may be confused with basal cell carcinoma. Treatment consists of curettage or cryosurgery, which may need to be repeated several times.

Warts

Warts are caused by cutaneous infection with papillomavirus. Many types of warts occur in HIV infected patients, including flat warts, verrucae vulgaris, plantar warts and condylomata acuminata. These warts tend to be more widespread, larger and more resistant to therapy than the same lesions in healthy adults. Treatment usually consists of curettage, cryosurgery or application of concentrated salicylate or podophyllin. Because of poor healing in these patients' perianal area, we do not recommend salicylate or podophyllin application in this location.

Influenza

Infection with HIV has not been widely recognized as a predisposing condition for influenza. However, there has been an increase in influenza and pneumonia mortality, a marker for influenza, among young adults, temporally related to the HIV epidemic. Thus, influenza should be considered in the evaluation of respiratory illness in HIV-infected patients when the virus is known to be in the community. The CDC has recommended that patients over 6 years of age with symptomatic HIV infection should receive yearly influenza vaccine. Because these patients may not mount protective antibody responses to vaccination, it may be necessary to provide prophylaxis with amantiadine when influenza A is known to be in the community. These issues are yet to be clarified through careful studies. Health care workers who care for these patients and other immunocompromised patients should receive influenza vaccine in an effort to reduce nosocomial transmission.

Suggested Readings

1. Gifford Leoung and John Mills, eds.: *Infectious Disease and Therapy, Volume 3: Opportunistic Infections in Patients with the Acquired Immunodeficiency Syndrome.* Marcel Dekker, Inc, 1989.
2. Drew, W.L.: Cytomegalovirus infection in patients with AIDS. *Journal of Infectious Diseases* 1988;158:449-456.
3. Influenza Prevention, 1988-89. *Medical Letter* 1988;30:83-84.

The Author

THOMAS C. BAILEY, M.D.

Dr. Bailey is a member of the Division of Infectious Diseases, Department of Medicine, at Washington University School of Medicine and is associated with Washington University's AIDS Clinical Trials Unit.

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Reprints not available

SPECIAL SERIES: Chronic Disease Reports

Racial Differences in Cancer Mortality in Missouri

Ross C. Brownson, Ph.D., James R. Davis, M.S.,
and Jian C. Chang, Ph.D.
Columbia, Missouri

The discrepancy between black and white cancer mortality rates remains a cause of concern for the public health community. The authors discuss some of the factors that contribute to the problem and suggest that an organized local, state and national effort is necessary to find a solution.

Cancer is the second leading cause of death in Missouri, accounting for 10,913 deaths in 1988.[1] It is one of the few major causes of death for which mortality has risen over the past 35 years.[2,3] Although cancer is a serious public health concern for all segments of the population, it impacts certain racial groups more severely.

Among the major racial and ethnic groups in the United States, blacks have the highest overall cancer mortality rate.[4] National data suggest that cancer mortality rates are 27% higher among blacks than whites.[5] From 1974 to 1983, overall cancer mortality rates increased 14% for black males and 8% for black females, compared with 4% for both white males and females.[6]

This article contrasts cancer mortality and disease stage at the time of diagnosis for the four most common cancer types among whites and blacks in Missouri and suggests some of the reasons for these differences. We hope examination of these data will lead to strategies for cancer prevention and control.

Methods

Mortality Analyses. Data from the Missouri Center for Health Statistics[7] were used to examine racial differences in mortality due to cancer of the lung (*International Classification of Diseases, 9th Revision*[8]) [*ICD-9]* 162, 163), colon and rectum (*ICD-9* 153, 154, 159), prostate (*ICD-9* 185), and female breast (*ICD-9* 174). For the period 1980-1988, average annual age-specific rates were calculated for 10-year age groups and overall age-adjusted rates were standardized to the 1970 U.S. population. Analyses were limited to the differences between whites and blacks because of the small number of persons from other racial groups.

Stage at Diagnosis Analyses. Since tumor stage at the time of diagnosis is an important predictor of cancer mortality,[2] data from the Missouri Cancer Registry (MCR) were used to determine the stage at diagnosis among whites and blacks for each of the four cancer types. The MCR is a statewide central registry, and cancer reporting by Missouri hospitals has been mandated by law since 1984.[9] Stage at diagnosis was classified as local, regional, or distant, based on the medical record of each patient. Fewer than 1% of the cases were classified as "unknown," and these were excluded from the analyses.

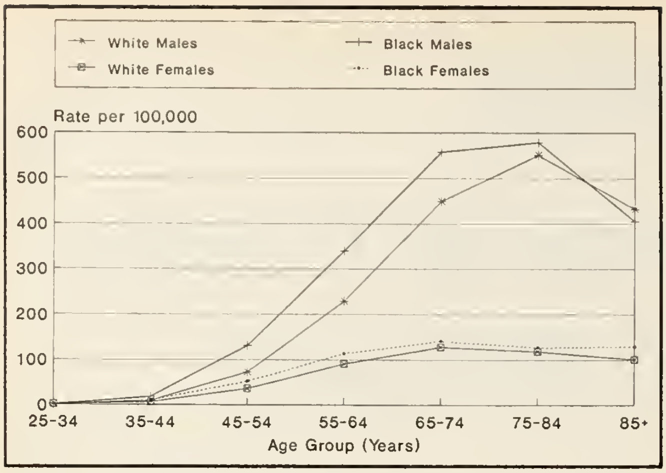

Fig. 1. Average annual age-specific lung cancer mortality among whites and blacks, Missouri, 1980-88.

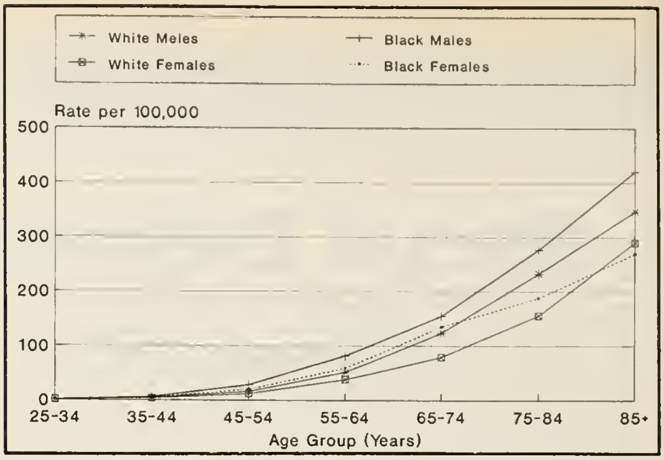

Fig. 2. Average annual age-specific colorectal cancer mortality among whites and blacks, Missouri, 1980-88.

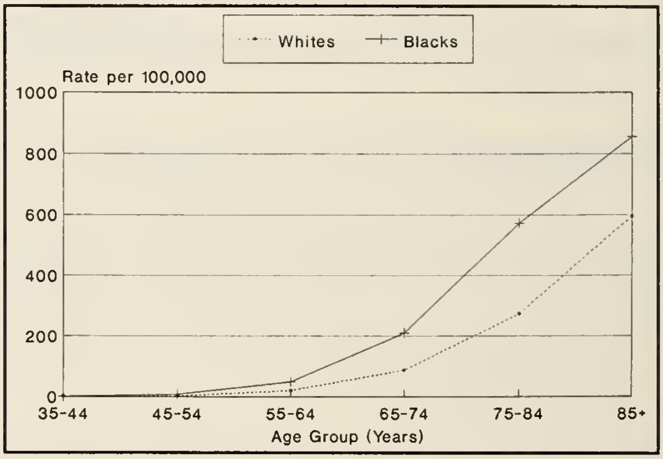

Fig. 3. Average annual age-specific prostate cancer mortality among whites and blacks, Missouri, 1980-88.

Results

The age-adjusted mortality rate per 100,000 for all cancer sites combined was 210 among white males, and 313 among black males. The corresponding rates in white and black females were 132 and 178, respectively. These rates represent a white-black difference in total cancer mortality of 49% for males and 35% for females.

Figure 1 presents the differences between white and black lung cancer mortality rates. The average annual lung cancer rate was 32% higher among black men than white men and 23% higher among black women than white women. Racial differences by age group among males were greatest in the younger age groups, whereas white-black differences in female lung cancer rates were relatively constant over all age groups.

Age-specific rates of colorectal cancer were higher for black men than any other race or sex subgroup in each age group (Fig 2). Colorectal cancer rates were 43% higher for black women than white women and 34% higher for black men than white men.

The largest racial difference in cancer rates was noted for prostate cancer (Fig 3). The overall, age-adjusted prostate cancer rate for blacks was 41.5 per 100,000, compared with 19.8 per 100,000 for white. This is a difference of 110%.

Figure 4 shows that age-specific female breast cancer rates were generally higher for blacks than whites, although the difference in the overall age-adjusted rates was relatively small (16%), compared with other cancer types.

Tumor stage at the time of diagnosis for lung and colorectal cancers are presented in Figure 5. For lung cancer, slightly more cases were diagnosed at the localized stage among whites than among blacks (27% vs. 24%). The same proportion of colorectal cancers were diagnosed at the regional stage for whites and blacks; however, 7% more cases were localized among whites and 7% more cases were distant staged among blacks.

Relatively large differences in stage at diagnosis were shown for prostate cancer (Fig 6). Fifteen percent more cases of prostate cancer were diagnosed at the localized stage in whites than in blacks. Figure 6, illustrating data for female breast cancer, also shows a clear tendency toward earlier detection of this cancer among whites.

Discussion

Our study shows that Missouri cancer mortality rates among blacks are higher than those among

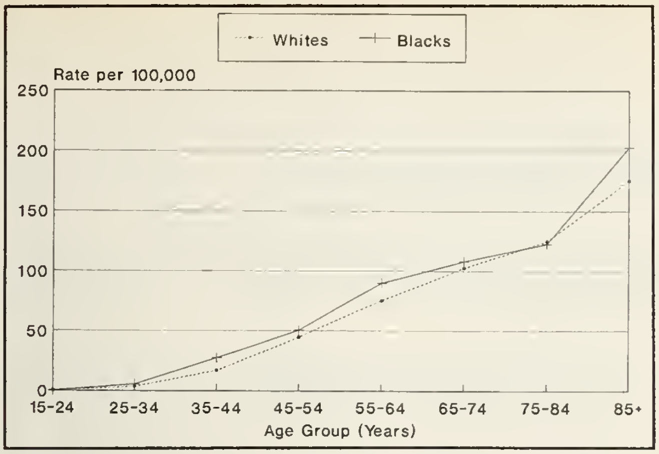

Fig. 4. Average annual age-specific female breast cancer mortality among whites and blacks, Missouri, 1980-88.

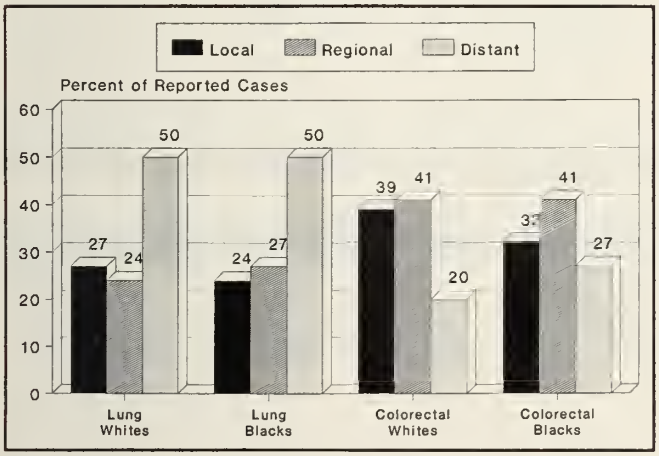

Fig. 5. Stage at diagnosis for lung and colorectal cancer among whites and blacks, both sexes combined, Missouri, 1984-88.

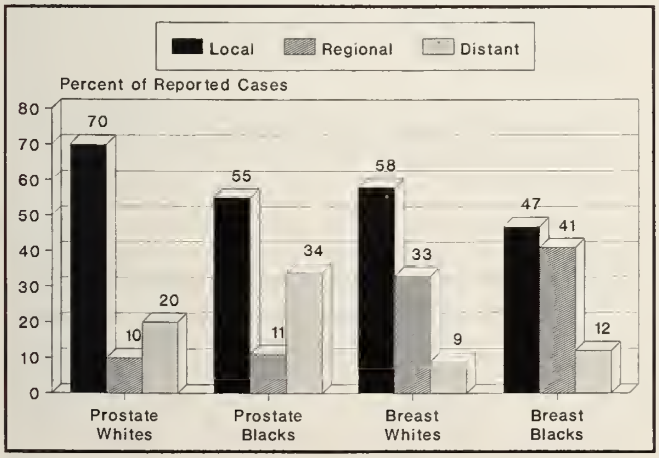

Fig. 6. Stage at diagnosis for prostate and female breast cancer among whites and blacks, Missouri, 1984-88.

whites for all cancer sites combined and for each of the four major cancer types (i.e., lung, colorectal, prostate, and breast). Differences between white and black total cancer mortality in Missouri are larger than national estimates for both males (49% in Missouri vs. 38% in the U.S.[5]) and females (35% in Missouri vs. 14% in the U.S.[5]).

Missouri patterns in age-specific cancer rates for whites and blacks are largely similar to national data,[4] although a few exceptions are noteworthy. At the national level, age-specific lung cancer rates are higher in black males than white males, until the late 60s, and higher in black females than white females, until the late 50s.[4] The Missouri data show higher lung cancer rates in black males than white males for all age groups except 85 years and older, and higher rates in black females than white females for all age groups. For female breast cancer, U.S. data show higher rates in blacks until about age 50, then higher rates in whites.[4] In Missouri, breast cancer rates were higher in blacks than whites for all age groups.

Although the largest racial difference in overall, age-adjusted cancer rates was shown for prostate cancer, the highest number of deaths occurred due to lung cancer. For the nine-year period studied, lung cancer accounted for 1,786 deaths in black males and 737 deaths in black females. Prostate cancer was the cause of death for 737 black men, and breast cancer accounted for 725 black women's deaths.

Cigarette smoking accounts for 90% of lung cancer deaths among men and 79% among women.[10] This suggests that approximately 1,607 (0.90 x 1,786) of the lung cancer deaths among black men were directly due to smoking and, therefore, were preventable. Blacks have higher smoking rates than whites, although a lower percentage of blacks are heavy smokers.[11] This is encouraging news for prevention efforts targeting blacks, since heavy smokers have the most difficulty quitting.[10]

Other cancer risk factors of concern in black populations include alcohol consumption, nutrition, and occupational exposures.[11] Alcohol is estimated to be responsible for 3% of total cancer mortality.[12] Although racial differences in overall drinking rates are relatively small,[6] heavy drinking is more common among blacks.[11] Dietary factors account for an estimated 35% of all cancer deaths;[12] however, few detailed data have been collected on racial differences in dietary patterns. Furthermore, limited information is available on occupational exposures, though blacks are more likely to be employed in occupations that place them at higher risk for cancer.[11]

The tendency toward later disease stage at the time of diagnosis among blacks for the cancers we studies is a clear contributor to the higher cancer mortality rates in blacks. For example, the five-year survival rate for early stage prostate cancer is 84%, whereas that for late stage disease is only 29%.[2] In our study, 15% fewer blacks than whites were diagnosed at the localized stage, and 14% more blacks than whites had distant disease. Mortality could be substantially reduced for several of the cancers we studied through widespread application of such early detection practices as mammography, stool occult blood testing, and digital rectal examination.[2]

Lower socioeconomic status is an important predictor of the high cancer mortality among blacks.[11] The percentage of black Americans below the poverty level (33.8%) is three times that for white Americans (11.5%).[6] Lower socioeconomic status affects other factors that influence cancer survival, such as knowledge of primary prevention, knowledge and availability of early detection practices, and access to state-of-the-art treatment.[13] For example, survey data suggest that blacks tend to accept common cancer myths more readily (e.g., bruising causes cancer), that they may delay as much as three to 12 months before seeking treatment, and that they have a more pessimistic attitude toward cancer survival.[11]

Conclusion

The discrepancy between black and white cancer mortality rates, as with many other major causes of death, remains a cause of concern for the public health community. The factors that contribute to higher cancer mortality among blacks include a higher prevalence of risk factors (i.e., smoking, alcohol consumption, diet, and occupation), later disease stage at time of diagnosis, and delays in treatment.[2,6,10,11] A concerted local, state, and national effort is required to reduce cancer mortality among blacks and other high-risk minority groups.

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The Authors

ROSS C. BROWNSON, Ph.D.
JAMES R. DAVIS, M.S.
JIAN C. CHANG, Ph.D.

All three authors are affiliated with the Missouri Department of Health, Columbia, Missouri. Dr. Brownson is the director of the Division of Chronic Disease Prevention and Health Promotion; Mr. Davis is the chief of the Bureau of Smoking, Tobacco and Cancer; and Dr. Chang is the director of the Missouri Cancer Registry.

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Reprints

Ross C. Brownson, Ph.D.
Division of Chronic Disease Prevention
and Health Promotion
Missouri Department of Health
201 Business Loop 70 West
Columbia, Missouri 65203

Current Techniques of Prenatal Screening for Down Syndrome

Michael S. Cardwell, M.D., and John W. Gay, M.D.
Columbia, Missouri

Prenatal testing for Down Syndrome, the most common human malformation, is possible through three techniques: analysis of historical risks factors, ultrasonography, and evaluation of maternal serum alpha-fetoprotein levels. The authors describe these current screening techniques.

Down syndrome is the most common congenital malformation syndrome, whose incidence has been reported to be 1 per 660 newborn.[1] Trisomy of chromosome 21 (47, +21) is the cause[2] of the syndrome first described in 1866 by Langdon Down. It was not until 1959, however, that the abnormal karotype was found.[3,4]

Numerous phenotypic abnormalities are present in the Down syndrome infant.[5] The most obvious feature is an upward slanting of the corners of the eyes, giving the child a "mongoloid" appearance, hence the term "mongolism."[6] Other abnormalities include generalized hypotonia, mental retardation, delayed intrauterine and extrauterine growth, congenital heart abnormalities, gastrointestinal atresia, particularly duodenal atresia, fine hair, and simian creases of the palms.[5,6]

The relationship between maternal age and risk for Down syndrome is well established.[7] The risk of a 20-year-old woman delivering a Down syndrome baby is approximately 1/1900; a 35-year-old, 1/365; and a 49-year-old, 1/12.[7] However, approximately 80% of all Down syndrome babies are delivered of women less than age 35 because of this group's higher fertility.[8]

Prenatal Diagnosis

The first prenatal diagnosis of a chromosomal disorder was accomplished in 1967.[9] Since that time, prenatal diagnosis of chromosomal disorders has become an established procedure.[10] Maternal age of 35 years or greater, a previous pregnancy complicated by a chromosomal abnormality of the fetus, or a family history of chromosomal disorders are the usual indications for prenatal testing to rule out Down syndrome and other chromosomal disorders.[11]

Prenatal diagnosis of Down syndrome is possible with either genetic amniocentesis or chorionic villi sampling. In the first, fluid is obtained through a needle inserted with ultrasonographic guidance into the amniotic cavity. Fetal and desquamated cells of the amniotic membranes are then grown in culture; karotyping is performed approximately 7-21 days later.[12] The procedure is done at 15-18 weeks' gestation.

Chorionic villi sampling involves removing a small portion of the trophoblastic cells (placenta) at 8-10 weeks' gestation. Rapid karotyping is possible because the trophoblastic cells are actively dividing and cell culture is unnecessary.[13]

Screening for Down syndrome has historically been reserved for mothers with the established risk factors previously outlined. However, using these criteria, only 20% of all fetuses affected with Down syndrome would be detected prenatally. In the past several years, two other prenatal screening techniques for Down syndrome have become recognized: ultrasonographic screening and screening via maternal serum alpha-fetoprotein (MSAFP) levels.[14,15]

Ultrasonographic Screening

Fetuses with Down syndrome may have anomalies that can be detected on prenatal ultrasonogram. Congenital heart anomalies, such as endocardial cushion defects, are potentially detectable, and their presence may suggest a fetus with Down syndrome.[16] Another anomaly readily evident on ultrasonography is duodenal atresia, which affects approximately 8% of all Down syndrome infants.[17,18] The great majority of Down syndrome fetuses do not have these grossly visible features on ultrasonography; however, other ultrasonographic signs, such as the biparietal diameter to femur length ratio (BPD/FL) and posterior occipital-nuchal skin thickening, may be used in screening.[14,19-21]

Down syndrome fetuses tend to have shorter femurs than unaffected fetuses,[6] but the biparietal diameter is usually within the normal range.[22] Both the femoral length and biparietal diameter, easily attainable by ultrasonography, are standard measurements. By using the BPD/FL ratio it should be possible to find fetuses likely to have Down syndrome. Indeed, recent studies have confirmed this. Using a 1.5 standard deviation cutoff, Lockwood and co-workers were able to screen for Down syndrome between 15 and 23 weeks' gestation with a sensitivity of 50%-70% at two centers. The false positive rate was approximately 4.6%-7.0%.[19]

Down syndrome fetuses are more likely to have thickened posterior occipital-nuchal skin compared with normal fetuses.[23] Benacerraf and associates were able to identify Down syndrome fetuses ultrasonographically with a sensitivity of 45% using a posterior occipital-nuchal skin fold thickness of 6 mm or more.[14] Using a combination of posterior occipital-nuchal skin thickening of 6 millimeters of more, and a ratio of actual to expected femur length of 0.91 or less, Benacerraf et al identified fetuses with Down syndrome with a sensitivity of 75% and a specificity of 98%.[20] If other anomalies, such as cardiac defects, were present, the sensitivity increased to 82%.[20] These ultrasonographic studies were performed between 15 and 21 weeks' gestation, ideal for prenatal screening. Assuming a prevalence in the screened population of one case of Down syndrome per 1000 deliveries, the positive predictive value would be 3.6%.[20] Genetic amniocentesis is usually performed for cytogenetic studies if the maternal risk of having a fetus with Down syndrome is 0.4%.[8]

Maternal Serum Alpha-Fetoprotein Screening

Maternal serum alpha-fetoprotein screening for neural tube defects has been performed for many years, especially in Great Britain.[24,25] In 1984, Merkatz and associates serendipitously discovered an association between low MSAFP levels and autosomal trisomy when a 28-year-old patient with very low MSAFP levels delivered an infant with trisomy 18. A more comprehensive review of women in their institution revealed a significant association between low MSAFP levels and carrying a fetus with autosomal trisomy, particularly Down syndrome.[15] Since that time, many researchers have verified the association between a low MSAFP level and Down syndrome.[26-28]

Alpha-fetoprotein is a glycoprotein produced by the fetal gastrointestinal tract, predominantly the liver.[29] Decreased production of alpha-fetoprotein by Down syndrome fetuses is thought to be the cause of low MSAFP levels.[30] The MSAFP levels are usually reported as "multiples of the median" for a particular gestational age. A low MSAFP level is considered to be 0.25 to 0.50 multiples of the median, depending on the individual researcher's cutoff.[27,28,31]

Recent studies of MSAFP testing have identified other risk factors: maternal age, maternal weight, diabetic status of the mother, and gestational age of the fetus.[32-35] Genetic amniocentesis, the definitive diagnostic procedure, is offered when the risk of carrying a fetus with Down syndrome is 0.4% or more, equivalent to a maternal age risk of 35 years.[20] Palomaki and associates claim that another 20% of affected fetuses could be identified by a low MSAFP level, adjusted by maternal age, besides those associated solely with advanced maternal age.[27] Sensitivity detection could be increased by raising the cutoff level for MSAFP measurement. However, this would expose patients to a greater fetal loss rate from genetic amniocentesis. Cuckle et al calculated that using a cutoff level of 0.5 multiple of the median, corrected by maternal weight, a detection rate of 28% was possible, and only 2.8% of all patients would have to undergo amniocentesis. To achieve this detection rate based on maternal age alone, 4.3% of all patients would have to undergo amniocentesis.[32]

Conclusion

Three general methods of prenatal screening for Down syndrome have been presented: screening based on historical risk factors, ultrasonographic screening, and screening based on MSAFP levels. The literature continues to advocate definitive diagnostic procedures, such as genetic amniocentesis or chorionic villi sampling, in the presence of historical risk factors.[28] Screening via ultrasonography is more sensitive and specific than MSAFP screening; however, not every pregnancy is evaluated by ultrasonography, and routine ultrasonographic screening is not now recommended by the National Institutes of Health.[36] Ultrasonographic screening is also expensive ($100-$350 per examination) and must be interpreted by experienced clinicians. On the other hand, MSAFP screening for neural tube defects, is considered by most authorities to be part of routine prenatal care.[25] Careful assessment of low MSAFP levels could enhance the prenatal detection of Down syndrome at a fraction of the cost of obstetrical ultrasonography. Future research on the prenatal detection of Down syndrome could perhaps focus on a combined ultrasonographic-MSAFP approach.

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The Authors

MICHAEL S. CARDWELL, M.D.
JOHN W. GAY, M.D.

Dr. Cardwell is assistant professor of obstetrics and gynecology and director of Maternal-Fetal Medicine at the University of Missouri-Columbia School of Medicine. Dr. Gay is also an assistant professor of obstetrics and gynecology at the MU School of Medicine.

Reprints

Michael S. Cardwell, M.D.
Department of Obstetrics-Gynecology
N610 Health Sciences Center
University of Missouri-Columbia
One Hospital Drive
Columbia, MO 65212

The Use of Rectal Temperature to Monitor Thermal Injury of Marathon Runners in Temperate Weather

Charles J. Ash, M.D., James R. Cook, M.D.
Springfield, Missouri
Louis D. Homer, M.D., Ph.D.
Bethesda, Maryland

The methods of evaluating thermal injury after marathon events in temperate weather have produced considerable debate. In this article, the authors address the problem of monitoring internal temperature during periods of rapid change.

Hypothermia in distance runners was the subject of a spirited debate recently in *Physician and Sportsmedicine.*[1] There were strong differing opinions as to the criteria for diagnosis, particularly the use of oral (T_{ORAL}) and skin (T_{SKIN}) temperatures. The participants included the medical team at the Boston Marathon and prominent exercise physiologists. The use of T_{SKIN} and T_{ORAL} measurements was strongly criticized. Most seemed to feel that rectal temperature (T_{RECTAL}) is preferred as a measure of blood and brain temperature (T_{CORE}). Esophageal (T_{ESOPH}) and tympanic membrane (T_{TYMP}) temperature measurements are considered more reliable during thermal transients, but are not practical for use at first aid stations.

At the heart of the debate is the evaluation of the exhausted runner who appears at the first aid tent in a state of near collapse, shivering uncontrollably, especially on a cool and windy day. It seemed to us that the important factor is the immediate change that takes place when exertion stops, either by finishing the race or collapsing. When an exhausted runner with sweat-soaked clothing, skin and hair stops running, he might still be exposed to considerable heat loss by evaporation for the next 15 to 30 minutes.

An interesting case that seems pertinent occurred at the Boston Marathon in 1988 and was described recently by Micheli in *Physician and Sportsmedicine.*[2] "One of the two runners — a cadet at West Point — had a potentially fatal temperature (above 107°F)." According to Micheli, he was quickly covered with an ice water bath and wet paper towels and given 4 L of IV fluid. These measures brought his temperature down to 103°F, but it continued to fall — to 95°F. "His thermoregulatory system was totally out of whack, so we felt he should be checked at a hospital," Micheli points out. There, he was treated further for dehydration and released.

It appeared to us that the well-established lag in rectal temperature change during periods of rapid change in body temperature might explain this chain of events. The cadet's initial rectal temperature of 107°F may not have represented T_{CORE} shortly after finishing the race. And after being covered with an ice water bath following collapse, his rectal temperature

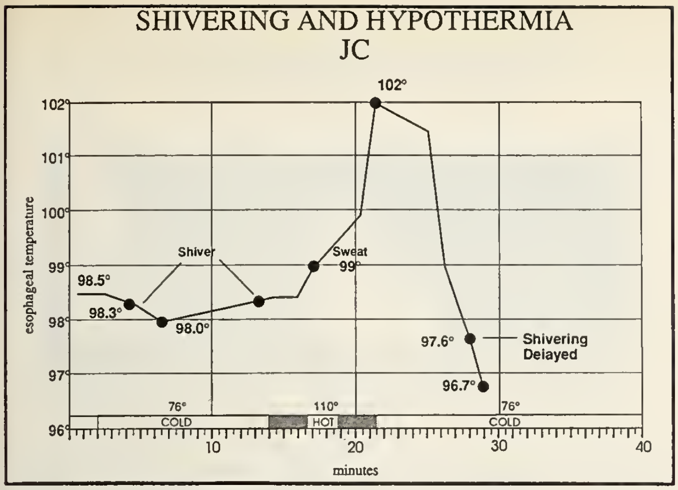

Fig. 1. After initial immersion in cold water for 12 minutes, JC was immersed in the hot bath for 8 minutes followed immediately by transfer to the cold bath. Note the initial T_{ESOPH} drop limited by shivering, followed by the rapid T_{ESOPH} response to heating and cooling. Shivering consistently prevented further drop in T_{ESOPH} throughout these experiments.

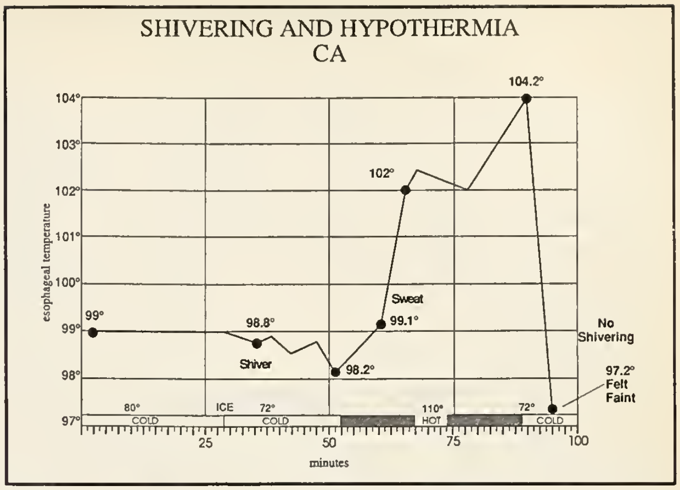

Fig. 2. Comparison of T_{ESOPH} T_{RECTAL} and T_{ORAL} responses to hot and cold bath exposure. Note the effective heat conservation initially by shivering. T_{ORAL} lag and T_{ESOPH} responses are quite similar, and marked T_{RECTAL} is obvious for a full 15 minutes.

apparently continued to fall for some time after treatment was discontinued.

Methods and Material

To determine the accuracy of rectal temperature as a measure of transient core temperature, we used two rectangular whirlpool baths large enough to permit total immersion. One bath was filled with cold water. When the water temperature (T_{H20}) was not cool enough, ice was used to lower the temperature sufficiently to produce shivering. The other bath was filled with hot water and maintained at 110°F. The agitator was used to maximize heat transfer. A wet suit hood was worn by the test subjects in the hot bath to reduce heat exchange from the head and neck by radiation and evaporation. The onset of shivering and sweating was observed. The T_{H20} was monitored constantly. The T_{ESOPH} was assumed to represent T_{CORE} accurately and was monitored at a distance of 34 cm from the incisors with a YSI Telethermometer and a series 400 esophageal probe. T_{RECTAL} and T_{ORAL} were measured in similar fashion. The subjects JC (age 51), CA (age 57) and RH (age 19) were well-conditioned male athletes in excellent health. Informed consents were obtained.

Results

The results of the first experiment are recorded in Fig 1. Initial T_{ESOPH} was 98.5°F. The subject, JC, was immersed to the neck in the cold bath. The T_{H20} was 76°F. The T_{ESOPH} began to drop almost immediately and shivering developed in four minutes, with a drop in the T_{ESOPH} of only 0.2°F. Intense shivering prevented the development of actual hypothermia, defined as 95°F or lower, presumably by raising the subject's caloric output. Despite continued shivering for 10 minutes, the lowest T_{ESOPH} recorded was 98.0°F. This was only 0.3°F below the shivering setpoint of 98.3°F. When transferred from the cold bath (76°F) to the hot bath (110°F), the subject's T_{ESOPH} rose in two minutes. Sweating occurred at 99°F, after eight minutes. At a T_{ESOPH} of 102°F, he was again transferred to the cold bath. Although the water felt "cold," noticeable shivering did not occur until T_{ESOPH} had dropped to 97.6°F. This was 0.7°F below the previous shivering setpoint of 98.3°F. The lowest temperature recorded after onset of shivering was 96.7°F, or 1.6°F below the previously established shivering setpoint.

In the second experiment (Fig 2), after a baseline T_{ESOPH} of 99.0°F was noted, CA was immersed in the cold bath. The coldest tap water obtainable on this date was 80°F, and shivering did not develop until ice was added, lowering the T_{H20} to 72°F. Shivering began at a T_{ESOPH} of 98.8°F. Continued shivering prevented depression of T_{ESOPH} past 98.2°F despite continued exposure for 25 minutes. After transfer to the hot bath, CA's sweating setpoint was 99.1°F. His T_{ESOPH} was maintained at 102°F ± 0.5°F for 10 minutes by expos-

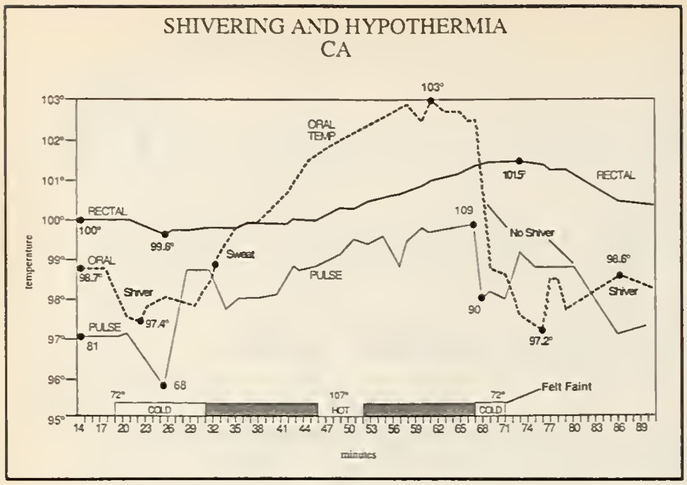

Fig. 3. See caption under Figure 2.

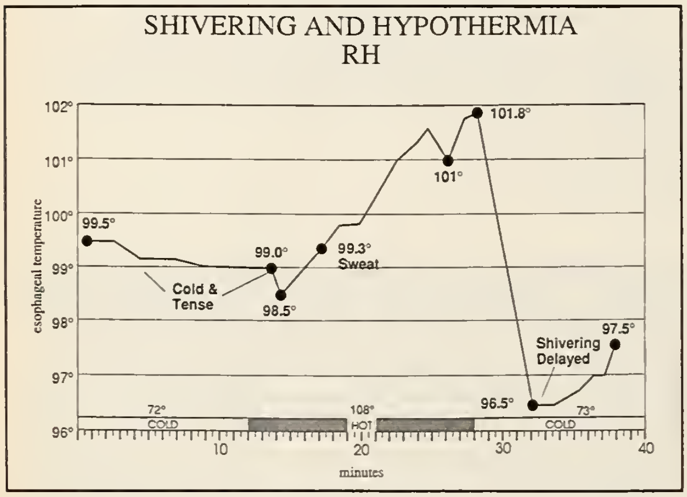

Fig. 4. Similar to Fig. 1. Initial shivering was interpreted as tenseness.

ing the upper limbs and trunk to room temperature. The T_{ESOPH} was then allowed to rise to 104.2°F momentarily. The subject was then transferred to the cold bath. His T_{ESOPH} dropped rapidly to 97.2°F, or 1.6°F below the previous shivering setpoint, in 10 minutes. No shivering occurred, and because the subject felt faint, the experiment was discontinued.

The same protocol was repeated with CA as the subject, this time measuring T_{RECTAL} and T_{ORAL}. As can be clearly seen in Fig 3, changes in T_{RECTAL} lag far behind, making the measurement totally useless. After transfer to the cold bath, T_{ORAL} and pulse began to fall almost immediately, but T_{RECTAL} responded much more slowly. At one point, T_{ORAL} was 4.2°F below T_{RECTAL}. At another point, T_{ORAL} was 2.0°F *above* T_{RECTAL}. The widest T_{RECTAL} swing was 1.9°F. The widest T_{ORAL} swing was 5.6°F. After prolonged heating, T_{RECTAL} did not begin to fall until six minutes after immersion in the cold bath.

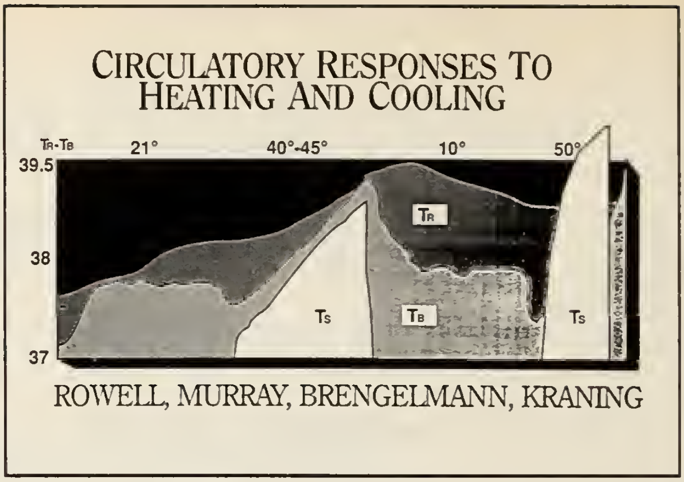

Fig. 5. Strikingly similar temperature changes are noted during periods of exposure to hot and cold environments during periods of light and heavy work. Note the marked lag in T_{RECTAL} despite rapid changes in T_{CORE}. Refer to text for description. Reprinted with permission (Rowell et al).

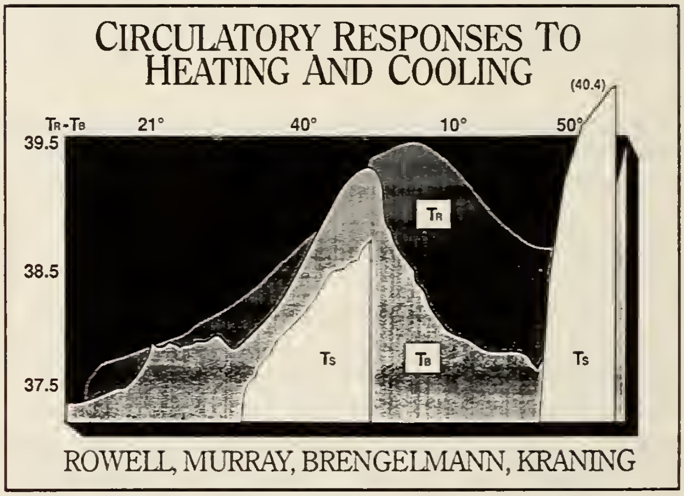

Fig. 6. See caption under Figure 5.

In the final experiment (Fig 4), the initial T_{ESOPH} of subject's RH was 99.5°F. After immersion in the cold bath (72°F) for 10 minutes, the lowest T_{ESOPH} recorded was 99.0°F. Although he never described shivering, the subject's sensations of coldness and muscle tension increased, and T_{ESOPH} would not fall below 99.0°F despite 15 minutes' exposure. Immediately after transfer to the hot bath (108°F), his T_{ESOPH} initially fell to 98.5°F with no shivering and then rose rapidly to 101°F. Sweating was noted at 99.3°F, which was 0.2°F below the baseline T_{ESOPH}. His T_{ESOPH} was intentionally maintained between 101°F and 102°F for 10 minutes. He was then transferred to the cold bath. Shivering occurred in less than four minutes at a T_{ESOPH} of 96.5°F, which was a full two degrees lower than the previously recorded low of 98.5°F. The T_{ESOPH} would not drop further despite continued immersion. RH was removed from the cold bath after 10 minutes. The esophageal probe was removed after T_{ESOPH} had risen to 97.5°F. Syncope did not occur.

Discussion

In these experiments, shivering did not occur when T_{ESOPH} was elevated, despite rapid cooling. Shivering did occur when T_{RECTAL} was elevated (Fig 3). When immersed in a hot or cold bath, the subject's T_{SKIN} and the T_{H20} should be identical. This would seem to indicate that the overwhelming stimulus for shivering and sweating, at least in this laboratory setting, is the internal T_{CORE}. There is no evidence from these data that paradoxical shivering occurs. There is direct evidence that only four minutes are required to change from a sweating to a shivering state (Fig 4).

This laboratory setting does not include strenuous exertion as a variable and does not attempt to simulate the exhaustion of a marathon runner. However, in 1969, Rowell et al, did include heavy and light work in a comparable experimental setting and noted strikingly similar results.[3] Perfusion suits from NASA were used rather than water baths. The temperature of the circulating water in the suits was changed "almost instantaneously" and then maintained at 80°C, 10°C and 50°C. The rapid changes of blood temperature (T_{BLOOD}) and marked lag in T_{RECTAL} are obvious when changing suddenly from hot to cold environments (Figs 5 & 6). The measurement of T_{RECTAL} appeared to be totally useless as an indicator. Despite exposure for 30 minutes to temperature of 10°C, T_{BLOOD} did not fall below 37.5° C. The authors attributed this to peripheral vasoconstriction and increased metabolic heat production (shivering).

Heat exchange during strenuous exercise has also been studied in a laboratory setting by Baum[4] and by Minard.[5] Baum was able to correlate T_{ESOPH} with caloric output and described a decrease in both sweating and shivering thresholds as a result of training in distance runners. As defined by him, these setpoints are roughly 2°F apart.

Minard (Figs 7 & 8) and Benzinger[6] (Fig 9) compared tympanic membrane temperature (T_{TYMP}) and T_{ESOPH} to T_{RECTAL} and both noted a considerable lag in T_{RECTAL} during changes in environment or work load. This lag has been explained by the presence of feces and by the lack of blood supply to the splanchnic bed during vigorous exercise. In Severinghaus' classical work, the use of hypothermia during anesthesia was found to produce a discrepancy of up to 12°C (21.6°F) between T_{RECTAL} and T_{CORE} (Fig 10) during induction in vagotomized dogs.[7] These findings appear to confirm the conclusion that T_{RECTAL} is a rather poor measure of rapidly changing T_{CORE}.

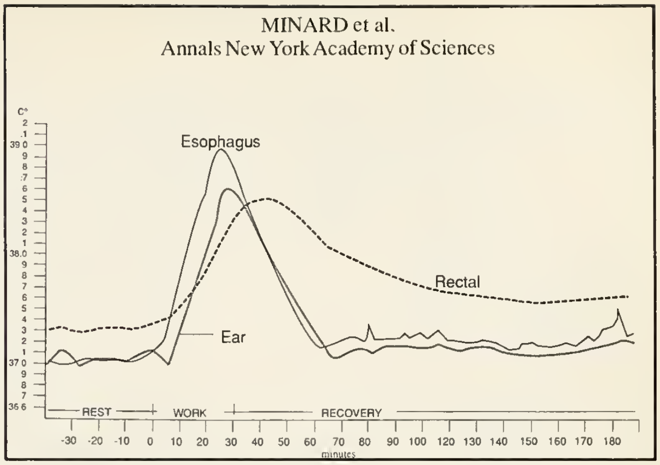

Fig. 7. Minard's documentation of the marked lag in T_{RECTAL} during periods of rapid T_{CORE} change. Reprinted with permission.

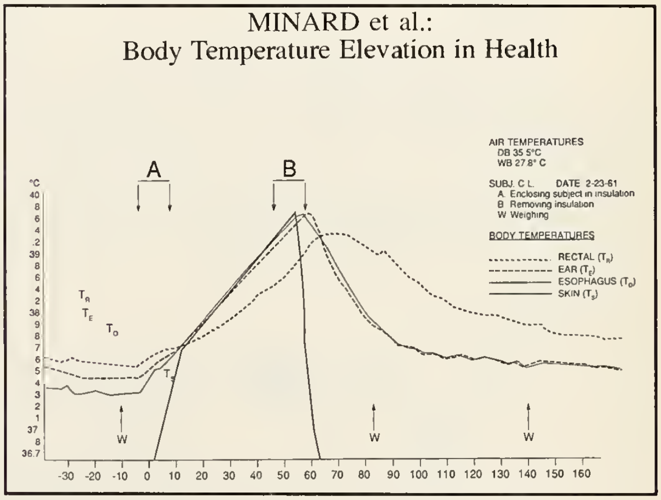

Fig. 8. See caption under Figure 7.

Rectal temperature has always been the standard of measurement during equilibrium and accurately reflects T_{CORE} while at rest. However, the measurement of T_{CORE} during rapid change is considerably more difficult. It is Benzinger's opinion that the use of T_{RECTAL} was the primary reason for the delay in defining sweating and shivering setpoints.[8] The T_{TYMP} and T_{ESOPH} reflect true T_{CORE} transients more accurately, but these measurements are not easily taken outside the laboratory, and the usefulness of T_{TYMP} has been recently challenged by Brengelmann.[9]

As measured by Armstrong,[10] the post-race T_{RECTAL} of Alberto Salazar ranged from 99°F to 104.4°F. Maughan[11] was unable to relate post-race T_{RECTAL} to either finishing time or weight loss. The range of T_{RECTAL} recorded at Aberdeen was 96.1°F to 103.8°F and "hyperthermia was not a problem." Rozycki recorded T_{RECTAL} of 101.3°F – 107.4°F three minutes after the

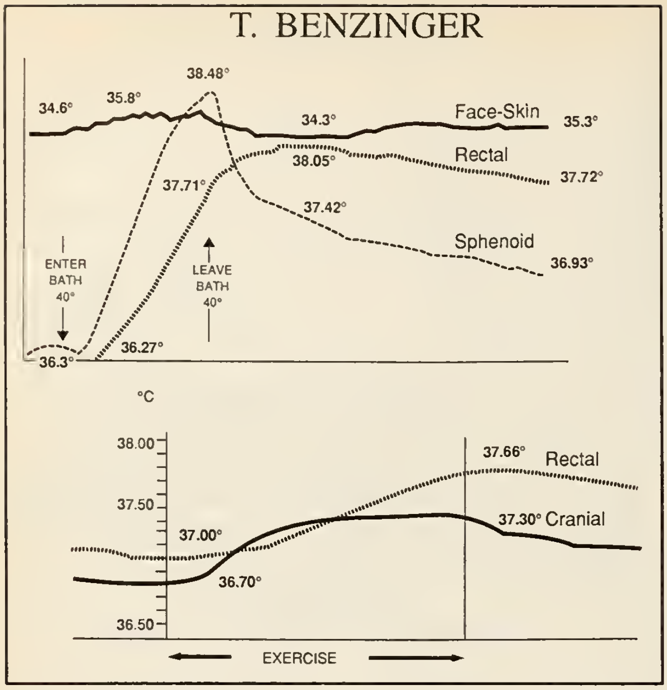

Fig. 9. Benzinger's documentation of the marked lag in T_{RECTAL} during periods of rapid T_{CORE} change. Reprinted with permission.

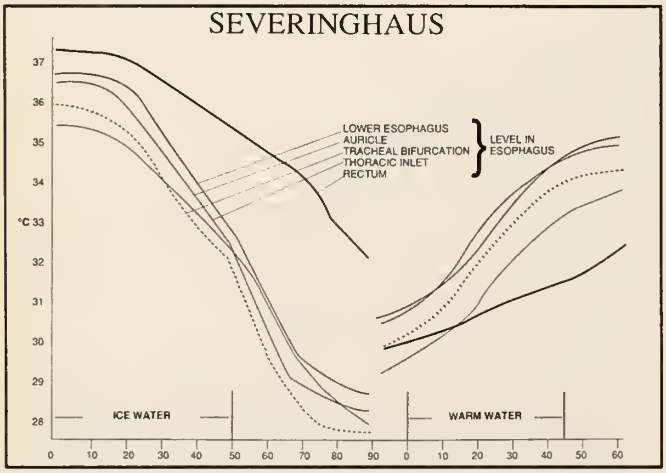

Fig. 10. Severinghaus's classical work with dogs and hypothermia during induction of anesthesia. Reprinted with permission.

race, and 99.8°F — 105.8°F at 15 minutes in the absence of any symptoms of heat illness.[12]

During a marathon event, sweating is stimulated as the T_{CORE} increases past the sweating threshold. A trained runner can generate heat at the rate of 1200 KCal per hour and relies primarily on evaporation for heat loss. Heat gain is surprisingly low considering the 15-fold increased heat production that develops. Heat gain in Calories = temperature rise °C x kg body weight x 0.82 (H_2O equivalent), which amounts to 57 KCal/°C in a 70-kg man. A rise in T_{CORE} is the stimulus for sweating, and it does not appear that excessive heat loss can occur on a cool windy day while still running. The continued production of heat by running and the termination of sweating if a decrease in T_{CORE} occurs would prevent hypothermia.

The entire situation changes when the runner collapses or stops. Heat production drops precipitously, T_{CORE} drops, and sweating stops. However, wet skin, hair and clothing permit considerable additional heat loss by evaporation. The stored heat of 50 — 150 KCal (1.8°F — 5.4°F) might be rapidly depleted. Assuming a continued rate of 17 KCal per minute heat loss (1000 KCal/hour) from sweat evaporation, shivering would develop in five to 10 minutes. The T_{RECTAL} might still be elevated. In the final experiment (Fig 4), RH went from a sweating to a shivering state in less than *four* minutes despite a lowered shivering setpoint.

It seems that the debate regarding running and hypothermia cannot be resolved by evaluating T_{RECTAL} measurements alone. Since T_{ESOPH} and T_{TYMP} measurements of T_{CORE} carry a slight risk, and since T_{RECTAL} and T_{ORAL} and T_{SKIN} often do not accurately reflect T_{CORE} during rapid change, it would be difficult to design a study for use in the field that would add significantly to the literature.[13]

Conclusions

The measurement of T_{RECTAL} and T_{SKIN} is not recommended to monitor hypothermia or hyperthermia following strenuous exercise. Although T_{RECTAL} is an adequate measure of T_{CORE} at thermal equilibrium and is higher than either T_{ESOPH} or T_{TYMP}, it may be quite inaccurate as a measure of thermal change.

Shivering probably indicates a decreased T_{CORE}. Paradoxical shivering with a hot T_{CORE} as measured by T_{ESOPH} or T_{ORAL} did not occur in our experiments, although shivering in the presence of an elevated T_{RECTAL} clearly did occur. Since the lag in the response of T_{RECTAL} during rapid change is well known and the associated possibility of shivering with an elevated T_{RECTAL} is illustrated in these studies, it seems reasonable to suppose that shivering marathon runners may have an elevated T_{RECTAL} that does not truly reflect T_{CORE}. Any measured T_{RECTAL} that contradicts clinical findings should be viewed with extreme skepticism and should usually be ignored.

Measures to increase, not prevent, heat loss should be followed during an endurance event. Precautions against excessive heat loss and shivering should be considered only when the runner's heat production is drastically curtailed by collapse or completion of the marathon. Real hypothermia (<95°F) would not be anticipated in temperate weather in the absence of collapse. However, runners who develop shivering after a marathon race should be warmed with protective covering to prevent further heat loss.

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The Authors

CHARLES J. ASH, M.D.
JAMES R. COOK, M.D.
LOUIS D. HOMER, M.D., Ph.D.

Dr. Ash is a research professor at the Center for Scientific Research at Southwest Missouri State University and an orthopaedic surgeon at Lester E. Cox Medical Center, Springfield, Missouri. Dr. Cook is affiliated with the Department of Anesthesiology at St. John's Regional Health Center, Springfield, Missouri. Dr. Homer is Acting Head of the Environmental Medicine Department at the Naval Medical Research Institute, Bethesda, Maryland.

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Gail McDaniel, Art Director at Lester E. Cox Medical Center created the graphs for this article.

Reprints

Charles J. Ash, M.D.
308 Medical Tower
Springfield, Missouri 65802-1991

Hepatitis Induced Rapid Changes in Gallbladder Wall Thickness: A Case Report

Curtis C. Stautz, M.D., and William C. Koury, M.D.
Kansas City, Missouri

The wall of the gallbladder may become thickened due to a variety of causes; both biliary and non-biliary. In this case, the rapidity of onset was a key to making the diagnosis.

There are many causes of gallbladder wall thickening. The majority of cases occur with intrinsic gallbladder disease. When no gallbladder disease is evident, the rapidity of onset and resolution of the wall thickening may be a clue to the diagnosis.

Case Report

A 32-year-old white woman had a five-day history of nausea, vomiting, fever to 102°, chills and abdominal pain. The abdominal pain radiated to the flanks and on deep inspiration was concentrated in the right costal area on the right. Liver enzymes were markedly elevated.

Contrast enhanced computed tomographic (CT) examination demonstrated a markedly thickened gallbladder wall without evidence of stones or ductal dilatation. Sonography the same day confirmed an 11 mm thick gallbladder wall without stones (Fig 1).

The finding of positive IgM antibodies to hepatitis A confirmed the diagnosis and supported continued medical management. Repeat CT scanning on the fifth hospital day showed complete resolution of gallbladder wall thickening (Fig 2).

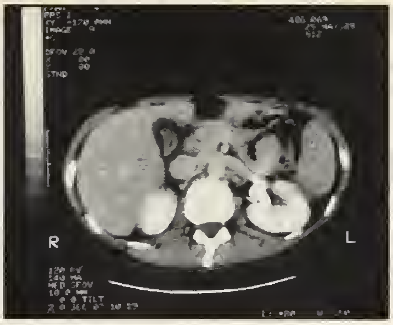
Discussion

The normal gallbladder wall thickness has an upper limit of 3 mm.[1] Most cases of gallbladder wall thickening are due to intrinsic disease of the gallbladder, usually cholecystitis. Non-biliary causes of gallbladder wall thickening include hepatitis, malignancy, hypoalbuminemia, ascites, right-sided heart failure, renal disease, and multiple myeloma.[2]

The appearance of a thickened gallbladder wall on CT has been previously described.[3,4] In our case, the appearance of gallbladder wall thickening on CT was verified with sonography. A CT scan performed five days later showed the thickening had resolved.

Of the known causes for gallbladder wall thickening, most are chronic. Hypoalbuminemia, malignancy, chronic cholecystitis, ascites, right-sided heart failure, renal disease and multiple myeloma progress and resolve slowly. They are unlikely to produce rapid changes in gallbladder wall thickness. Acute hepatitis, on the other hand, may take a rapid course. In our case, rapid resolution of the marked gallbladder wall thickening accompanied improvement in the patient's liver enzyme levels.

Fig. 1a. CT image from the day of admission showing a markedly thickened gallbladder wall.



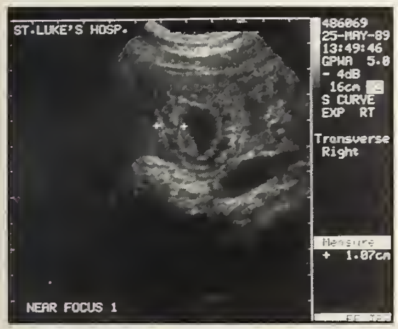

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Fig. 1b. Ultrasound image from the day of admission showing a markedly thickened gallbladder wall.

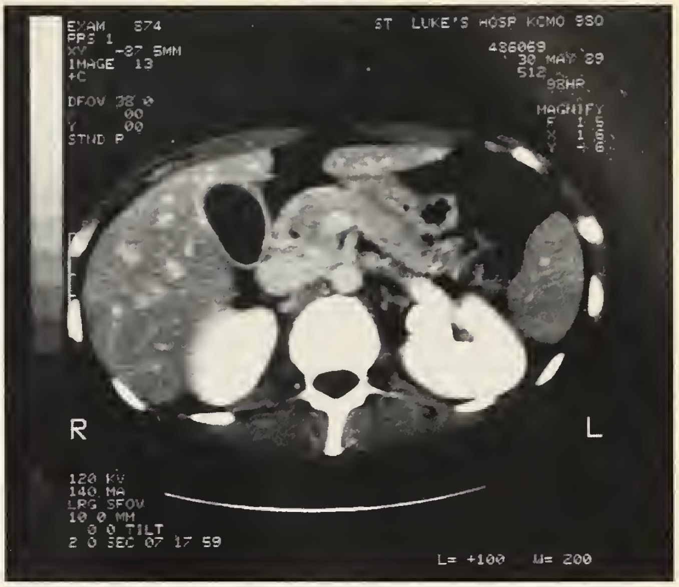
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Fig. 2. CT examination five days later revealed resolution of the gallbladder wall thickening.

Gallbladder wall thickening in hepatitis may have an anatomic basis. The venous drainage of the gallbladder is via the right portal vein.[5] Increased intrahepatic venous pressures that accompany hepatitis could hamper venous drainage of the gallbladder. This would in turn cause edema of the wall due to increased extravascular fluid. The process would be rapidly reversible with alleviation of increased portal pressures.

Gallbladder wall thickening can be accurately identified by CT and ultrasound. We believe rapid changes in gallbladder wall thickness, when due to non-biliary causes, should first suggest the diagnosis of hepatitis.

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The Authors

CURTIS C. STAUTZ, M.D.
WILLIAM C. KOURY, M.D.

Dr. Stautz and Dr. Koury are radiologists in the Department of Radiology at St. Luke's Hospital, Kansas City, Missouri.

Reprints

Curtis C. Stautz, M.D.
St. Luke's Hospital
Department of Radiology
4400 Wornall Road
Kansas City, MO 64111

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2 - 5 **16th Annual Meeting Federated Ambulatory Surgery Association — Ambulatory Surgery '90: Focus on Excellence** — Location: Anaheim Marriott, Anaheim, CA. Contact: Gerald G. Pousho, M.D., FASA, 700 N. Fairfax St., #520, Alexandria, VA 22314. 703/836-8808.

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3 - 5 **Pediatric Advanced Cardiac & Trauma Support for Life and Pediatric Advanced Life Support (PACTS/PALS)** — Location: Cardinal Glennon Children's Hospital, St. Louis, MO. Contact: Elaine Thompson, Continuing Medical Education, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-5657.

4 - 6 **Cardiology Update** — Location: Lodge of the Four Seasons, Lake Ozark, MO. Contact: Barry Kling, University of Missouri School of Medicine, Office of Continuing Education, MA215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

8 - 10 **Introduction to Doppler Echocardiography** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: Kathleen Habermehl, St. Louis University School of Medicine, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8897.

10 - 14 **1990 ASIM Leadership Development Conference: "Starting Off on the Right Track"** — Location: Hyatt Regency St. Louis Union Station, St. Louis, MO. Contact: Dana Jennings, American Society of Internal Medicine, 1101 Vermont Avenue, NW, Suite 500, Washington, D.C. 20005-3457. 202/289-1700.

11 **Toxicology Update 1990** — Location: Hyatt Regency St. Louis Union Station, St. Louis, MO. Contact: Bob Jaeger, Continuing Medical Education, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/772-8300.

11 **Third Annual Trauma Symposium: Care of the Multiple Trauma Patient** — Location: Holiday Inn, Clayton, MO. Contact: SLUMC Staff Development, Continuing Medical Education, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8095.

11 - 12 **Low Back & Sciatic Pain: Evaluation & Treatment** — Location: Washington University Medical Center, St. Louis, MO. Contact: Cathy Caruso, Continuing Medical Education, Washington University School of Medicine, Box 8063, 660 S. Euclid, St. Louis, MO 63110. 314/362-6893.

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16 - 17 **Focus on NICU** — Location: St. John's Mercy Medical Center, von Gontard Conference Center, St. Louis, MO. Contact: Judith L. O'Guin, St. John's Mercy Medical Center, 615 South New Ballas Road, St. Louis, MO 63141-8221. 314/569-6290.

18 **Kansas Medicine: Ten Years Later** — Location: Hyatt Regency Hotel, Kansas City, MO. Contact: Bernice Jackson, University of Kansas Medical Center, Office of Continuing Education, Rainbow and Olathe Blvds., Kansas City, KS 66103. 913/588-4490.

18 - 19 **30th Annual Washington University Eye Alumni Association Meeting** — Location: Washington University Medical Center, St. Louis, MO. Contact: Kathy Ryan, Washington University School of Medicine, Box 8096, 660 S. Euclid Ave., St. Louis, MO 63110. 314/362-5722.

19 **Cholesterol: Practical Aspects of Patient Management** — Location: Adam's Mark Hotel, St. Louis, MO. Contact: Anita Herbst, Continuing Medical Education, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8167.

27 - 31 **19th Annual Scientific Assembly - American College of Emergency Physicians State Chapter of California** — Location: Silverado Country Club, Napa, CA. Contact: CAL/ACEP office, 505 N. Sepulveda Blvd., Suite 12, Manhattan Beach, CA 90266. 213/374-4039 or 1-800-SEK-ACEP.

31 - June 1 **Patent Development** — Location: Stouffer Hotel, St. Louis, MO. Contact: Barry Kling, MU School of Medicine, Office of Continuing Education, MA215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

June

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1 - 2 **Ultrasound Symposium** — Location: St. John's Mercy Medical Center, von Gontard Conference Center, St. Louis, MO. Contact: Judith L. O'Guin, St. John's Mercy Medical Center, 615 South New Ballas Road, St. Louis, MO 63141-8221. 314/569-6290.

1 - 2 **3rd Annual Contact Lens Course** — Location: Washington University Medical Center, St. Louis, MO. Contact: Cathy Caruso, Continuing Medical Education, Washington University School of Medicine, Box 8063, 660 S. Euclid, St. Louis, MO 63110. 314/362-6893.

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5 - 7 **Introduction to Doppler Echocardiography** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: Kathleen Habermehl, Continuing Medical Education, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8897.

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6 - 10 **7th Annual Meeting of the Southern Orthopaedic Association** — Location: Hyatt Regency Hotel, Maui, Hawaii. Contact: Jeanette Stone, Southern Orthopaedic Association, 35 Lakeshore Drive, P.O. Box 190088, Birmingham, AL 35219-0088. 205/945-1848.

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8 - 9 **Primary Pediatrics** — Location: Holiday Inn Executive Center, Columbia, MO. Contact: Barry Kling, MU School of Medicine, Office of Continuing Education, MA215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

11 - 16 **Microsurgery of the Brain** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: Anita Herbst, Continuing Medical Education, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8167.

13 - 17 **Issues In Care: Pain** — Location: South Padre Hilton Resort, South Padre Island, TX. Contact: Charlene E. Lee, Office of Continuing Medical Education, Scott and White, 2401 S. 31st Street, Temple, TX 76508. 817/774-4073.

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July

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28 - Aug 3 **Advanced Otolaryngic Allergy** — Location: Tamarron Golf and Tennis Resort, Durango, CO. Contact: James W. Willoughby, M.D., Director, Missouri Postgraduate Course in Allergy, Inc., Suite A, 24-26 South Main Street, Liberty, MO 64068. 816/781-0902.

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5 - 10 **Ninth Annual Internal Medicine Review For the Primary Care Physician** — Location: South Padre Hilton Resort, South Padre Island, TX. Contact: Charlene E. Lee, Office of Continuing Medical Education, Scott and White, 2401 South 31st Street, Temple, TX 76508. 817/774-2350.

September

11 - 13 **Introduction To Doppler Echocardiography** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: Kathleen Habermehl, Continuing Medical Education, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8897.

17 - 19 **Memory Function in Aging and Aging Related Changes Symposium** — Location: Clarion Hotel, St. Louis, MO. Contact: Ms. Carolyn Leach, Conference Secretary, VA Medical Center, GRECC(111G-JB), St. Louis, MO 63125. 314/894-6510.

October

5 - 6 **33rd Annual Alumni Weekend** — Location: CME Auditorium, MA217, University of Missouri School of Medicine, Columbia, MO. Contact: Barry Kling, Office of Continuing Education, MA 215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

November

1 - 3 **Clinical Allergy For the Practicing Physician** — Location: Ritz-Carlton Hotel, St. Louis, MO. Contact: Cathy Caruso, Office of Continuing Medical Education, Washington University School of Medicine, 660 S. Euclid, Box 8063, St. Louis, MO 63110. 314/362-6893.

25 - 28 **Clinical Allergy — Inhalant and Food Sensitivity "Review and How-To"** — Location: Ritz-Carlton Hotel, Kansas City, MO. Contact: James W. Willoughby, M.D., Director, Missouri Postgraduate Course in Allergy, Inc., Suite A, 24-26 South Main Street, Liberty, MO 64068. 816/781-0902.

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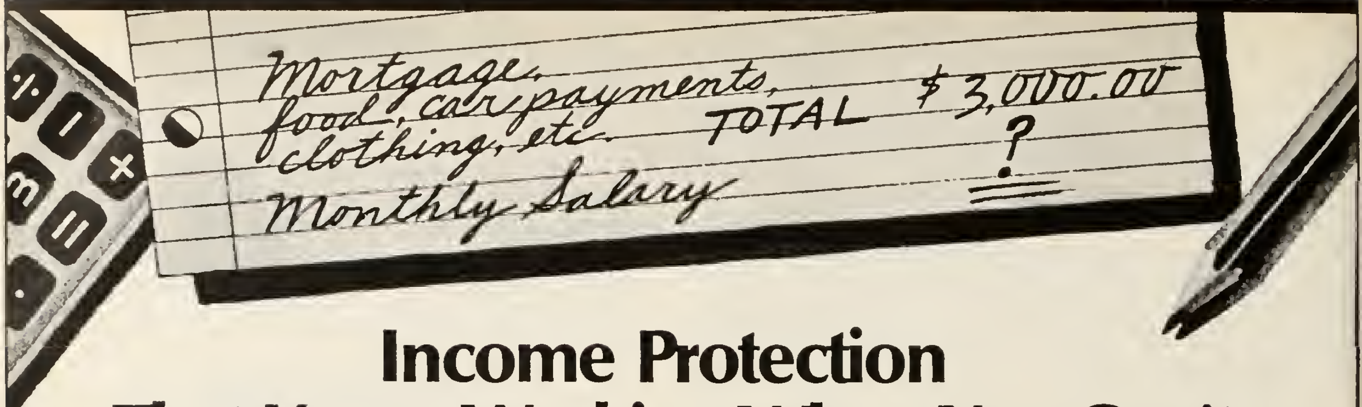

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Medical School News

St. Louis University

■ A study released in the March 22 issue of the *New England Journal of Medicine* estimates that more than $200 million in health care costs can be saved each year with proper medical intervention for patients who suffer from atrial fibrillation (AF).

Researchers at St. Louis University Medical Center, in collaboration with 14 other institutions found that most strokes in people with AF can be prevented by taking either aspirin or warfarin, an anticoagulant medication. Both drugs reduce the tendency of the blood to clot and have been found to lower the risk of stroke in patients with irregular heart beat between 50-80 percent.

The study, "Stroke Prevention in Atrial Fibrillation (SPAF)," involved more than 1,240 patients during an 18-month period and compared the effectiveness of warfarin or aspirin in preventing stroke in patients versus those who took only placebos. The national study, which was to originally last until late 1991, was discontinued more than a year ahead of schedule because of the effectiveness of the two drugs when compared to patients who received no medication.

The study was a joint effort by cardiologists and neurologists. The study was funded by the National Institutes of Health through the National Institute of Neurological Disorders and Stroke. Principal investigator at St. Louis University School of Medicine was **Robert M. Redd, M.D.**, assistant professor of internal medicine in the division of cardiology. **Camillo R. Gomez, M.D.**, assistant professor of neurology and director of the Stroke Resource Center at St. Louis University Medical Center served as a co-investigator of the SPAF study. Other co-investigators from the cardiology division included: **Dorothy Cadell, R.N.**, clinical nurse coordinator; **Arthur J. Labovitz, M.D.**, associate professor; and **Denise L. Janosik, M.D.**, assistant professor. Former faculty member **Thomas Buckingham, M.D.**, was also involved in the study.

Robert M. Redd, M.D.

■ Results of a four-year study indicate that nearly 15 years after the end of the Vietnam War, veterans show an increased prevalence of post-traumatic stress disorder (PTSD), reported the March 1 issue of the *Journal of the American Medical Association (JAMA)*.

St. Louis University Medical Center co-author and co-investigator of the study was **William R. True, Ph.D.**, associate professor of psychiatry and human behavior and also associate professor of public health for the Center for Health Services, Education and Research.

Researchers studied identical twins who had served in the military during the Vietnam era, 1965-1975. Marked differences were found in the prevalence of PTSD in association with Southeast Asia (SEA) service. The prevalence of PTSD was 16.8% in twins who served in SEA compared with 5.0% in co-twins who did not serve in SEA.

Results suggest that the three components of the PTSD diagnosis are differentially affected by service in SEA and exposure to combat. Among the twins, service in SEA without exposure to combat or exposure to low levels of combat produces a twofold to threefold increase in the prevalence of PTSD; a ninefold increase in prevalence is observed in veterans with high levels of combat exposure.

■ Statistics indicate almost 75% of self-reported relapses in alcoholic individuals are related to negative emotional states such as anxiety and depression. The findings of a new study suggest that failure to identify and treat panic attacks and related psychological problems may be one reason for the high percentage of relapses following therapy in alcohol abuse treatment programs.

This is one of the implications of a recent investigation by a group of researchers led by **C. Alec Pollard, Ph.D.**, associate professor of psychiatry and human behavior and director of the anxiety disorders center in the division of behavioral medicine, St. Louis University School of Medicine. Dr. Pollard's study found a high rate of panic attacks and panic disorders among alcoholics. It is the first study to compare the prevalence of panic disorders in alcoholics with that found in other patients and in non-psychiatric subjects. The research was published in the March issue of the *Journal of Nervous and Mental Diseases.*

C. Alec Pollard, M.D.

Dr. Pollard also found that female alcoholics and depressed patients of either sex were much more likely to develop agoraphobia than male alcoholics. The finding suggests that alcohol may have different psychological effects depending on the sex of the individual.

The implication of the study, according to Dr. Pollard, is that some alcoholic relapses may be due to a failure to treat alcohol abuse with a more comprehensive psychological approach that deals specifically with panic disorder.

■ A St. Louis University Medical Center researcher has received a prestigious award for outstanding contributions in cancer research. **Maurice Green, Ph.D.**, professor and director of the Institute for Molecular Virology, was given the first *John Krey III Memorial Award* as Outstanding Scientist/Re-

Maurice Green, Ph.D.

searcher in the metropolitan St. Louis area by the American Cancer Society.

The award, one of three established this year in memory of John Krey III, a St. Louis businessman and community leader, recognizes those individuals who have significantly enhanced cancer control through scientific research, clinical and humanitarian efforts.

Dr. Green has been director of the Institute for Molecular Virology since it was established in 1964. He is one of only a few scientists across the country who holds a lifetime Research Career Award from the National Institutes of Health. He joined the faculty of St. Louis University School of Medicine in 1956.

■ An expert in craniofacial and maxillofacial reconstructive surgery who specializes in pediatric cases has joined the faculty of St. Louis University School of Medicine. **Gregory C. Rinehart, M.D.**, has been named assistant professor of surgery in the division of plastic and reconstructive surgery. The announcement was made by **Sameer I. Shehadi, M.D.**, professor of surgery and head of the division.

Dr. Rinehart comes to the St. Louis University School of Medicine from the Institute of Craniofacial Surgery at Providence Hospital in Southfield, Michigan, where he was a clinical fellow in craniofacial surgery.

■ **Howard M. Druce, M.D.**, assistant professor of internal medicine in the division of allergy and immunology, has received a $17,479 grant from Syntex Laboratories, Inc., to evaluate a nasal spray for the treatment of sinusitis.

Traditionally, antibiotics alone are used to treat infectious sinusitis. However, in many cases they do not provide the necessary relief from nasal swelling. Dr. Druce is evaluating the use of a nasal steroid spray called Flunisolide as an adjunct therapy to antibiotics to see if it effectively accelerates recovery in sinusitis patients. Flunisolide has already been federally approved to treat allergic rhinitis.

Dr. Druce joined the faculty of St. Louis University School of Medicine in 1985 as director of the Nasal and Paranasal Sinus Research Laboratory.

Washington University

■ **James B. Lefkowith, M.D.**, assistant professor of medicine and pharmacology at Washington University School of Medicine in St. Louis, has been named the 1990 *Clinical Pharmacology Scholar* by the Burroughs Wellcome Fund.

As a Burroughs Wellcome scholar, Lefkowith will receive $300,000 over the next five years to conduct research on the molecular mechanisms involved in certain immunologic diseases.

The Burroughs Wellcome Fund is a private, non-profit foundation supported by Burroughs Wellcome Company, a research-based pharmaceutical firm. The scholar award program was established in 1960 to support the career development of clinical pharmacologists and to stimulate teaching, training and research in clinical pharmacology. Clinical pharmacologists play a vital role in understanding how drugs work in the human body, investigating new and better therapeutic agents and teaching physicians how to prescribe drugs safely.

University of Missouri-Columbia

■ **John W. Yarbro, M.D., Ph.D.**, director of hematology and medical oncology in MU's department of medicine, was elected March 10 to head the Panel on Hematologic and Neoplastic Disease for the United States Pharmacopoeia, the organization that sets the nation's standards for drug composition and usage. He will serve a five-year term as chairman of the panel and as a member of USP's Committee of Revision.

John Yarbro, M.D., Ph.D.

The USP's specialty panels propose changes that, following a thorough process of review, are received for adoption by the Committee of Revision, which comprises the chairmen of each panel. Its decisions lead to revisions in *The United States Pharmacopeia* and *The National Formulary* that are enforceable under state and federal laws and regulations, and in *USP Dispensing Information*, a comprehensive collection of established information about each drug for health-care practitioners and patients.

In the new position, Yarbro will appoint 15 experts to make up his panel, which focuses on drugs aimed at blood diseases and tumors. Yarbro has served on the panel since 1982. An MU faculty member since 1975, he formerly directed the National Cancer Institute Centers Program.

■ MU's School of Medicine was a leading research center for a recent study on stroke prevention that was published in the *New England Journal of Medicine*. The research project, headquartered at the University of Texas at San Antonio, found that daily doses of aspirin or warfarin may help prevent stroke in persons with atrial fibrillation. MU enrolled nearly 10 percent of the patients participating in the 15-center study, which is now entering a second phase. School of Medicine researchers involved with the trials are: **Greg Flaker, M.D.**, **Richard Webel, M.D.**, and **Barbie Nolte, R.N.**, of the division of cardiology, and **John Byer, M.D.**, department of neurology.

■ Television personality **James H. "Red" Duke, Jr., M.D.**, will be the speaker May 12 at the School of Medicine's annual commencement. A professor at the University of Texas Medical School at Houston since 1972, Duke hosts the nationally syndicated "Texas Health Reports" and hosted the former PBS series "Bodywatch." He is a founding member of the American Trauma Society and is an advanced trauma life support instructor for the American College of Surgeons. The *James F. Mitchell Foundation* named Duke "Surgeon of the Year" in 1988.

■ **John M. Chaney, M.A.**, and **Robert G. Frank, Ph.D.**, of the department of physical medicine and rehabilitation, will present a two-hour symposium on "Familial Factors Affecting Children's Coping with Chronic Illness" at the American Psychological Association's convention this summer.

■ An essay by **Maria Evans**, a third-year student at the School of Medicine, was published in the February 9 issue of the *Journal of the American Medical Association (JAMA)*. Her article, entitled "Dit,Dit," appeared in the column "A Piece of My Mind." It chronicled Evans' friendship with her mentor and fellow amateur radio operator, **Dr. W.B. "Pete" Stewart**, an MU professor of pathology who died unexpectedly in March 1988. At the AMA convention in Chicago last year, Evans received the $2,500 *Jerry L. Pettis Memorial Scholarship*, which is awarded to an outstanding student with an interest in the communication of science.

■ **Armando R. Favazza, M.D.**, professor and associate chairman of psychiatry, has been appointed an editorial reviewer for *Psychosomatic Medicine*.

■ **Bruce E. Harry, M.D.**, associate professor of psychiatry and adjunct associate professor of law, recently was elected a councilor of the American Academy of Psychiatry and the Law.

■ **Robert Hoffman, D.O.**, assistant professor of immunology and rheumatology at MU and a research associate at Harry S. Truman Memorial Veterans Hospital, is the principal author of an article published in the May issue of *Arthritis and Rheumatism*. His research team, including scientists from the Karolinska Institue in Sweden, has identified and isolated the genetic factors that may predispose people to mixed connective tissue disease, which was first described in the late 1960s by **Gordon Sharp, M.D.**, MU's director of immunology and rheumatology.

■ **Joseph W. Lamberti, M.D.**, associate professor of psychiatry, presented a paper at the recent meeting of the American Association of Sex Educators, Counselors and Therapists in Arlington, VA.

■ **Marian Minor, Ph.D.**, clinical instructor at MU's Arthritis Center, has received an Arthritis Foundation Arthritis Health Professional New Investigator Award to conduct a two-year study on how physical fitness affects work capacity in women with rheumatoid arthritis. The award is for $30,000.

■ **Marianne Morris, M.D.**, chief resident in the department of obstetrics and gynecology, recently was named "Outstanding Resident in Gynecologic Endoscopy" by the American Association of Gynecologic Laparoscopists.

■ **James M.A. Weiss, M.D.**, professor and chairman of psychiatry, has received a certificate of merit from *Medical Economics* for an article on socioeconomic medicine titled "A Survival Guide for the Occasional Expert Witness," published February 19, 1990. Weiss recently was elected to honorary membership in the Association de Methodologie et de Documentation en Psychiatrie, an international organization concerned with issues of reliability and validity in psychiatry.

■ Members of the department of physical medicine and rehabilitation were lead investigators for three papers presented April 20 at the Society of Behaviorial Medicine meeting in Chicago. The primary authors were **Robert Frank, Ph.D.**, associate professor and interim chairman; **Susan P. Buckelew, Ph.D.**, assistant professor; and **Kristofer J. Hagglund, M.A.**, psychology intern in the Mid-Missouri Psychology Intern Consortium.

University of Missouri-Kansas City

■ The University of Missouri-Kansas City School of Medicine recently received an enthusiastic endorsement by its accrediting body. The Liaison Committee on Medical Education (LCME) granted UMKC full accreditation of seven years, the maximum term allowed.

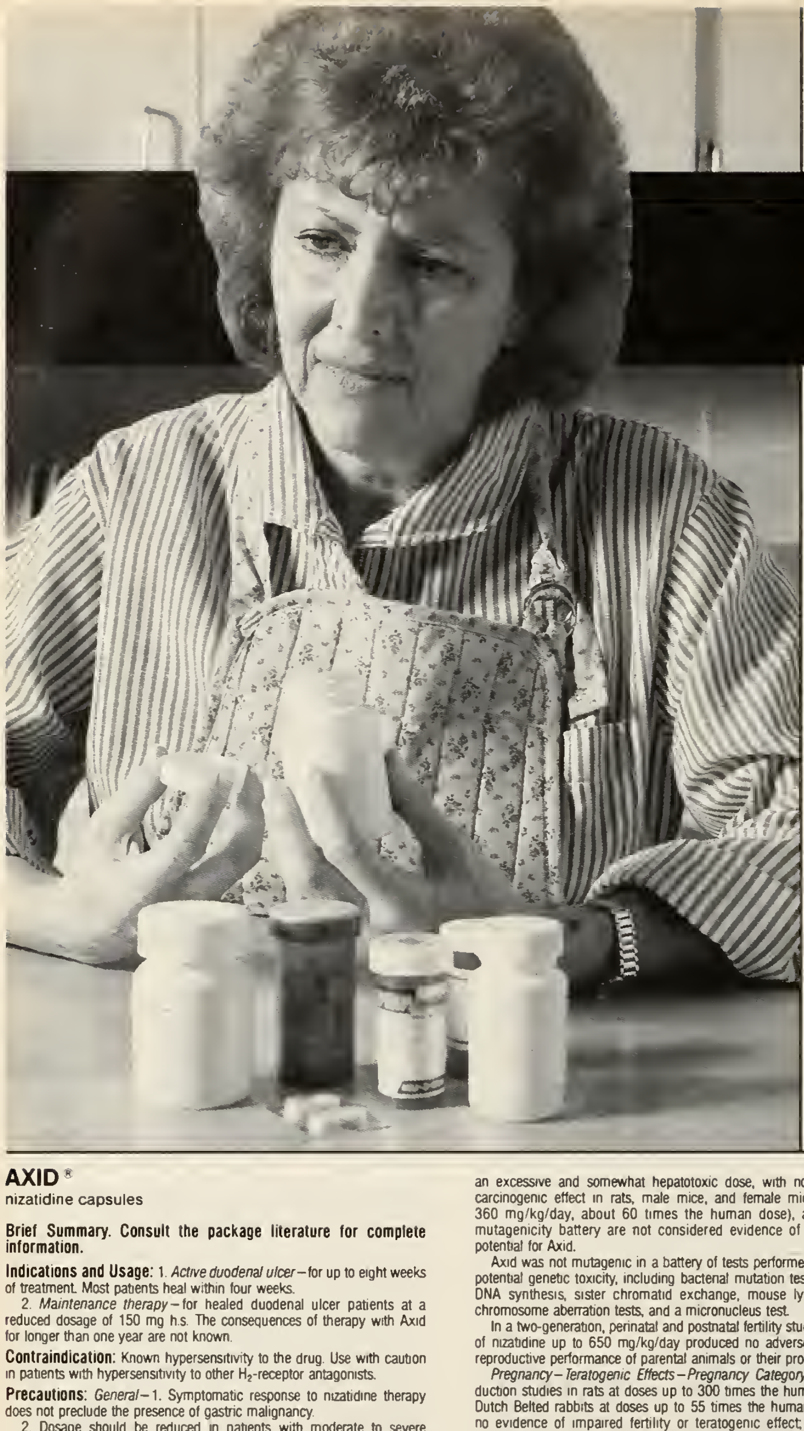
■ A gift from the St. Louis Friends Group is helping **Gary Smith, M.D., Ph.D.**, of Children's Mercy Hospital (CMH) to further his research on injuries to children from fireworks.

Dr. Smith, a pediatrics instructor and a fellow in pediatric emergency medicine, is this year's recipient of the *Dr. Alex Sonnenwirth Memorial Award*, awarded annually by the St. Louis Friends of the UMKC School of Medicine.

Dr. Smith's study will draw from 21 years of data on fireworks injuries that has been gathered at CMH. By focusing on the most common injury patterns and risk factors, he hopes to gain a better understanding of fireworks-related injuries. By looking at the scope and extent of injuries, and information on the type of firework associated with specific injuries, the results could be used as basis for effective preventive strategies. This could include state legislation to ban or further restrict fireworks. The $2,500 Sonnenwirth award was established in 1986 in memory of **Dr. Alex Sonnenwirth**, an early president of the St. Louis Friends Group. A distinguished St. Louis bacteriologist, Dr. Sonnenwirth was a strong supporter of the School of Medicine from its early days.

■ **Larry Dall, M.D.**, and **James Stanford, M.D.**, have been awarded $200,000 by the National Institute of Allergy and Infectious Diseases and Burroughs Wellcome Pharmaceutical Company for a multi-center, double-blind, comparative study of zidovudine alone versus zidovudine and acyclovir as treatment for patients with AIDS.

The project is being conducted through the auspices of the Kansas City AIDS Research Consortium (KCARC). In addition, the American Federation for AIDS Research awarded the KCARC $50,000 for enhancement of its research activities. Principal investigators are Dall and **Joe Brewer, M.D.** Stanford serves as clinical director of the study.



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References

1. *USP DI Update, September/October 1988, p 120.*
2. *Br J Clin Pharmacol 1985;20:710-713.*
3. *Data on file, Lilly Research Laboratories.*
4. *Scand J Gastroenterol 1987;22(suppl 136):61-70.*
5. *Am J Gastroenterol 1989;84:769-774.*

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Carcinogenesis, Mutagenesis, Impairment of Fertility–A two-year oral carcinogenicity study in rats with doses as high as 500 mg/kg/day (about 80 times the recommended daily therapeutic dose) showed no evidence of a carcinogenic effect. There was a dose-related increase in the density of enterochromaffin-like (ECL) cells in the gastric oxyntic mucosa. In a two-year study in mice, there was no evidence of a carcinogenic effect in male mice, although hyperplastic nodules of the liver were increased in the high-dose males as compared with placebo. Female mice given the high dose of Axid (2,000 mg/kg/day, about 330 times the human dose) showed marginally statistically significant increases in hepatic carcinoma and hepatic nodular hyperplasia with no numerical increase seen in any of the other dose groups. The rate of hepatic carcinoma in the high-dose animals was within the historical control limits seen for the strain of mice used. The female mice were given a dose larger than the maximum tolerated dose, as indicated by excessive (30%) weight decrement as compared with concurrent controls and evidence of mild liver injury (transaminase elevations). The occurrence of a marginal finding at high dose only in animals given an excessive and somewhat hepatotoxic dose, with no evidence of a carcinogenic effect in rats, male mice, and female mice (given up to 360 mg/kg/day, about 60 times the human dose), and a negative mutagenicity battery are not considered evidence of a carcinogenic potential for Axid.

Axid was not mutagenic in a battery of tests performed to evaluate its potential genetic toxicity, including bacterial mutation tests, unscheduled DNA synthesis, sister chromatid exchange, mouse lymphoma assay, chromosome aberration tests, and a micronucleus test.

In a two-generation, perinatal and postnatal fertility study in rats, doses of nizatidine up to 650 mg/kg/day produced no adverse effects on the reproductive performance of parental animals or their progeny.

Pregnancy–Teratogenic Effects–Pregnancy Category C–Oral reproduction studies in rats at doses up to 300 times the human dose and in Dutch Belted rabbits at doses up to 55 times the human dose revealed no evidence of impaired fertility or teratogenic effect; but, at a dose equivalent to 300 times the human dose, treated rabbits had abortions, decreased number of live fetuses, and depressed fetal weights. On intravenous administration to pregnant New Zealand White rabbits, nizatidine at 20 mg/kg produced cardiac enlargement, coarctation of the aortic arch, and cutaneous edema in one fetus, and at 50 mg/kg, it produced ventricular anomaly, distended abdomen, spina bifida, hydrocephaly, and enlarged heart in one fetus. There are, however, no adequate and well-controlled studies in pregnant women. It is also not known whether nizatidine can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. Nizatidine should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers–Studies in lactating women have shown that 0.1% of an oral dose is secreted in human milk in proportion to plasma concentrations. Because of growth depression in pups reared by treated lactating rats, a decision should be made whether to discontinue nursing or the drug, taking into account the importance of the drug to the mother.

Pediatric Use–Safety and effectiveness in children have not been established.

Use in Elderly Patients–Healing rates in elderly patients were similar to those in younger age groups as were the rates of adverse events and laboratory test abnormalities. Age alone may not be an important factor in the disposition of nizatidine. Elderly patients may have reduced renal function.

Adverse Reactions: Clinical trials of varying durations included almost 5,000 patients. Among the more common adverse events in domestic placebo-controlled trials of over 1,900 nizatidine patients and over 1,300 on placebo, sweating (1% vs 0.2%), urticaria (0.5% vs <0.01%), and somnolence (2.4% vs 1.3%) were significantly more common with nizatidine. It was not possible to determine whether a variety of less common events was due to the drug.

Hepatic–Hepatocellular injury (elevated liver enzyme tests or alkaline phosphatase) possibly or probably related to nizatidine occurred in some patients. In some cases, there was marked elevation (>500 IU/L) in SGOT or SGPT and, in a single instance, SGPT was >2,000 IU/L. The incidence of elevated liver enzymes overall and elevations of up to three times the upper limit of normal, however, did not significantly differ from that in placebo patients. Hepatitis and jaundice have been reported. All abnormalities were reversible after discontinuation of Axid.

Cardiovascular–In clinical pharmacology studies, short episodes of asymptomatic ventricular tachycardia occurred in two individuals administered Axid and in three untreated subjects.

CNS–Rare cases of reversible mental confusion have been reported.

Endocrine–Clinical pharmacology studies and controlled clinical trials showed no evidence of antiandrogenic activity due to nizatidine. Impotence and decreased libido were reported with equal frequency by patients on nizatidine and those on placebo. Gynecomastia has been reported rarely.

Hematologic–Fatal thrombocytopenia was reported in a patient treated with nizatidine and another H_2-receptor antagonist. This patient had previously experienced thrombocytopenia while taking other drugs. Rare cases of thrombocytopenic purpura have been reported.

Integumental–Sweating and urticaria were reported significantly more frequently in nizatidine- than in placebo-treated patients. Rash and exfoliative dermatitis were also reported.

Hypersensitivity–As with other H_2-receptor antagonists, rare cases of anaphylaxis following nizatidine administration have been reported. Because cross-sensitivity among this class has been observed, H_2-receptor antagonists should not be administered to those with a history of hypersensitivity to these agents. Rare episodes of hypersensitivity reactions (eg, bronchospasm, laryngeal edema, rash, and eosinophilia) have been reported.

Other–Hyperuricemia unassociated with gout or nephrolithiasis was reported. Eosinophilia, fever, and nausea related to nizatidine have been reported.

Overdosage: Overdoses of Axid have been reported rarely. If overdosage occurs, activated charcoal, emesis, or lavage should be considered along with clinical monitoring and supportive therapy. Renal dialysis for four to six hours increased plasma clearance by approximately 84%.

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New Members

■ **Steven D. Atwood, M.D.,** 3443 S. National, Springfield 65807, has become a member of the Greene County Medical Society. Dr. Atwood received his preliminary education at the University of Kansas and obtained his medical degree at the University of Kansas Medical Center in 1978. He completed his residency at the University of Washington, Seattle, WA. Dr. Atwood specializes in internal medicine.

■ **Dennis R. Breshahan, Jr., M.D.** Suite 20, 4320 Wornall Road, Kansas City 64111, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Breshahan received his preliminary education at Creighton University and obtained his medical degree at Creighton University School of Medicine in 1975. He completed his residency at Creighton-St. Joseph Memorial Hospital, Omaha, NE. Dr. Breshahan specializes in cardiology.

■ **Carolyn T. Davis, M.D.,** Suite 122, 4601 W. 109th St., Overland Park, KS 66211, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Davis received her preliminary education at Kansas State University and obtained her medical degree at the University of Kansas School of Medicine in 1986. She completed her residency at the Children's Mercy Hospital, Kansas City, MO. Dr. Davis specializes in pediatrics.

■ **Lawrence J. Drahota, M.D.,** Suite 510, 10550 Quivira Road, Overland Park, KS 66215, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Drahota received his preliminary education at the University of Notre Dame and obtained his medical degree at the University of Nebraska Medical Center in 1982. He completed his residency at the University of Kansas Medical Center, Kansas City, KS. Dr. Drahota specializes in general surgery.

■ **Mary M. Henry, M.D.,** 6550 B-C Troost, Kansas City 64131, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Henry received her preliminary education at Stanford University and obtained her medical degree at the University of Kansas School of Medicine in 1980. She completed her residency at Vanderbilt University Medical Center, Nashville, TN. Dr. Henry specializes in pathology.

■ **Steven Leitch, M.D.,** 3231 S. National, Springfield 65807, has become a member of the Greene County Medical Society. Dr. Leitch received his preliminary education and his medical degree at the University of Missouri-Kansas City in 1986. He completed his residency at the Mayo Graduate School of Medicine, Rochester, MN. Dr. Leitch specializes in internal medicine.

■ **Colleen M. Maynard, M.D.,** Suite 304, 930 Carondelet Drive, Kansas City 64114, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Maynard received his preliminary education at Creighton University and obtained his medical degree at Creighton University School of Medicine in 1984. He completed his residency at St. Luke's Hospital, Kansas City, MO. Dr. Maynard specializes in obstetrics/gynecology.

■ **Lisa K. Ovens, M.D.,** 3231 S. National, Springfield 65807, has become a member of the Greene County Medical Society. Dr. Ovens received her preliminary education at Drury College and obtained her medical degree at the University of Missouri-Columbia School of Medicine in 1986. She completed her residency at the University of Iowa Hospitals and Clinics, Iowa City, Iowa. Dr. Ovens specializes in internal medicine.

■ **Karl D. Pfuetze, M.D.,** Suite 510, 10550 Quivira Road, Overland Park, KS 66215, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Pfuetze received his preliminary education at Kansas University and obtained his medical degree at the Kansas University Medical Center in 1966. He completed his residency at Yolo County Hospital Woodland, CA. Dr. Pfuetze specializes in cardiology.

■ **Stephen H. Polmar, M.D.,** 400 S. Kingshighway, St. Louis 63110, has become a member of the Missouri State Medical Association. Dr. Polmar received his preliminary education at Union College and obtained his medical degree at Case Western Reserve University in 1967. He completed his residency at Johns Hopkins University Medical Center, Baltimore, MD. Dr. Polmar specializes in pediatrics.

■ **Susan S. Porter, M.D.,** 8900 Ward Parkway, Kansas City, MO 64114, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Porter received her preliminary education at Colorado State University and obtained her medical degree at the University of Kansas School of Medicine in 1979. She completed her residency at the University of Texas Health Science Center, San Antonio, TX. Dr. Porter specializes in anesthesiology.

■ **Howard M. Rosen, M.D.,** Suite 400, 2940 Baltimore, Kansas City 64108, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Rosen received his preliminary education at Johns Hopkins University and obtained his medical degree at Penn State University School of Medicine in 1983. He completed his residency at the University of Maryland Hospitals, Baltimore, MD. Dr. Rosen specializes in endocrinology.

■ **Thomas M. Shimshak, M.D.,** Suite 20-11, 4320 Wornall Road, Kansas City 64111, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Shimshak received his preliminary education at the University of Wisconsin and obtained his medical degree at the Medical College of Wisconsin in 1980. He completed his residency at the Medical College of Wisconsin, Milwaukee, WI. Dr.

Shimshak specializes in internal medicine/cardiovascular diseases.

David L. Tomlinson, M.D., Suite 138, 6400 Prospect, Kansas City 64132, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Tomlinson received his preliminary education at Kansas University and obtained his medical degree at the University of Kansas School of Medicine in 1982. He completed his residency at the University of Kansas Medical Center, Kansas City, KS. Dr. Tomlinson specializes in anesthesiology.

Cynthia C. Willis, M.D., Suite 100, 100 Mock, Blue Springs 64015, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Willis obtained her medical degree at the University of Missouri-Kansas City in 1985. She completed her residency at Truman Medical Center, Kansas City, MO. Dr. Willis specializes in obstetrics/gynecology.

James R. Wolski, M.D., 1443 N. Robberson, #208, Springfield 65802, has become a member of the Greene County Medical Society. Dr. Wolski received his preliminary education at Purdue University and obtained his medical degree at the Indiana University School of Medicine in 1982. He completed his residency at the University of Michigan, Ann Arbor, MI. Dr. Wolski specializes in diagnostic radiology.

Terrance L. Wood, M.D., Suite 205, Westowne IV, Liberty 64068, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Wood received his preliminary education at Drury College and obtained his medical degree at the University of Missouri-Columbia School of Medicine in 1985. He completed his residency at the University of Indiana Hospitals, Indianapolis, IN. Dr. Wood specializes in otolaryngology.

Resident Sections

Metro Med Resident Section

Frederick A. Abele, M.D. — *general surgery*
James R. Allen, M.D. — *general surgery*
Gina Boone, M.D. — *internal medicine*
Richard Brooks, M.D. — *internal medicine*
Thomas C. Chapman, M.D. — *internal medicine*
Kenneth A. Hacker, M.D. — *general surgery*
Gary D. Hall, M.D. — *general surgery*
Kimberly R. Martinez, M.D. — *internal medicine*
Brian A. Metz, M.D. — *general surgery*
Brian G. Mills, M.D. — *anesthesiology*
Randall Mitchem, M.D. — *internal medicine*
Gregory F. Muehlebach, M.D. — *general surgery*
Victoria W. Muehlebach, M.D. — *anesthesiology*
Timothy W. Olsen, M.D. — *internal medicine*
Medge D. Owen-Kummer, M.D. — *obstetrics/gynecology*
Bruce A. Owens, D.O. — *internal medicine*
Curt L. Ray, M.D. — *internal medicine*
Kevin F. Ring, M.D. — *internal medicine*
Bruce Silverberg, M.D. — *plastic surgery*
Rodney K. Woerther, M.D. — *internal medicine*
Patrick A. Zoellner, M.D. — *anesthesiology*

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In Memoriam

■ **David P. Bhend, M.D.,** died March 7, 1990 at the age of 48. Dr. Bhend, a psychiatrist, practiced medicine in Joplin for more than 18 years. He served on the staff of St. John's Regional Medical Center and Freeman Hospital. He obtained his medical degree at the Washington University School of Medicine in 1967. Dr. Bhend was a member of the Jasper County Medical Society.

■ **Robert L. Cooper, M.D.,** died December 19, 1989 at the age of 84. Dr. Cooper, a general practitioner, practiced medicine in Warrensburg for 42 years before retiring in 1975. He was instrumental in raising funds for and establishing the Johnson County Memorial Hospital in Warrensburg, now Western Missouri Medical Center. He also served on the Board of Regents of Central Missouri State Teachers College, now Central Missouri State University, from 1942-1951. He obtained his medical degree at Washington University School of Medicine in 1933. Dr. Cooper was a member of the Johnson County Medical Society.

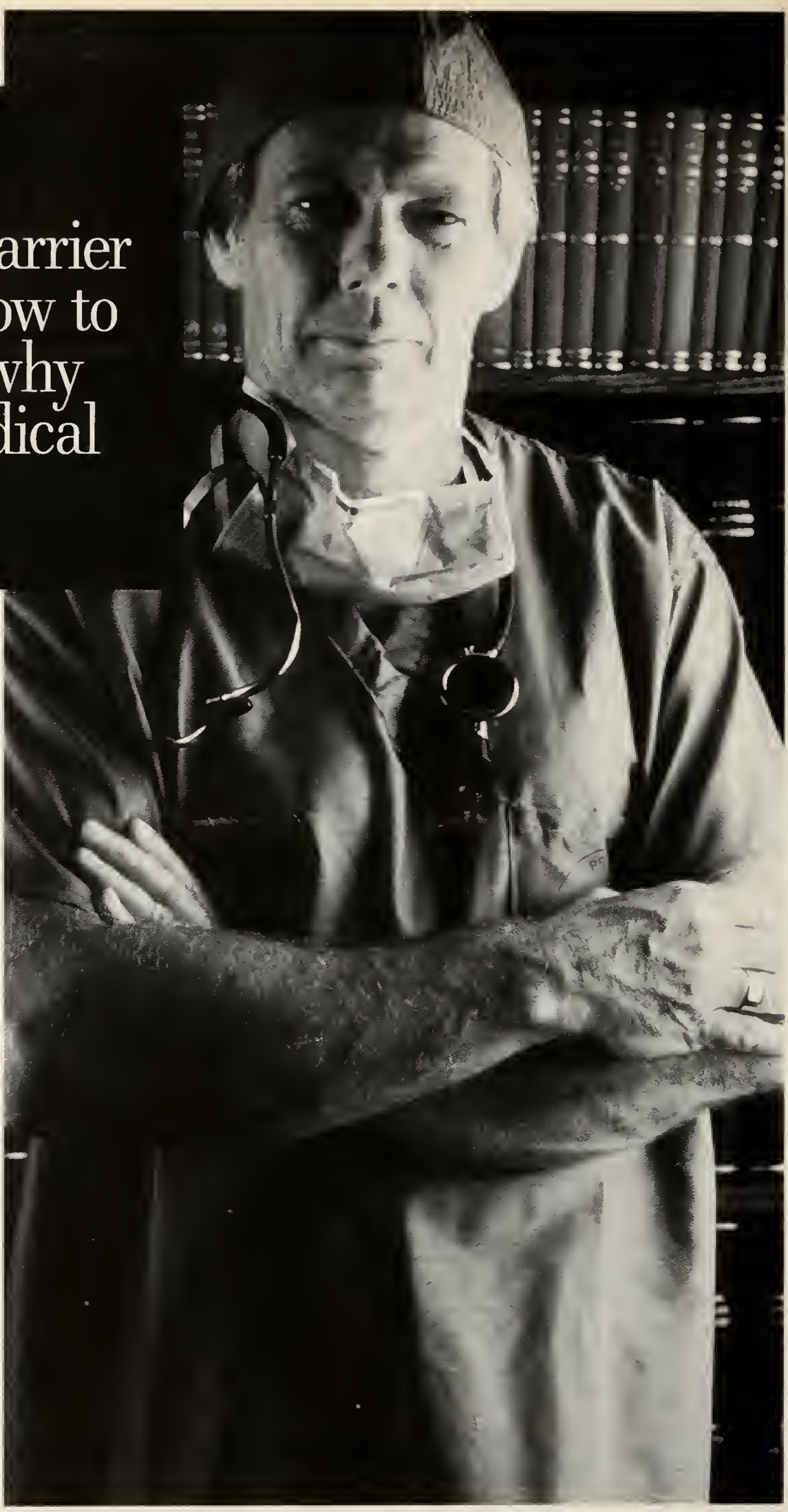
■ **Lionel M. Gallagher, M.D.,** died March 17, 1990 at the age of 65. Dr. Gallagher, a general practitioner, practiced medicine in California for 37 years. He obtained his medical degree at the University of Cincinnati School of Medicine in 1953. Dr. Gallagher was a member of the Cole County Medical Society.

■ **Charles L. Garcia, M.D.,** died December 27, 1989 at the age of 83. Dr. Garcia, a general practitioner, practiced medicine in Mexico for 42 years before retiring in 1983. He was instrumental in establishing the first coronary care unit at Audrain Medical Center. He served as a physician in the U.S. Army with the rank of major from July 1942 to September 1945. He obtained his medical degree at the St. Louis University School of Medicine in 1931. Dr. Garcia was a member of the Audrain County Medical Society.

■ **Edward L. Keyes, M.D.,** died February 11, 1990 at the age of 90. Dr. Keyes, a general surgeon, practiced medicine in St. Louis for 31 years before retiring in 1959 in order to devote his time to the American Red Cross. He was an assistant professor at the St. Louis University School of Medicine and was chairman of the old Firmin Desloge clinic. He obtained his medical degree at the Cornell University Medical School in 1926. Dr. Keyes was a member of the St. Louis Metropolitan Medical Society.

■ **Doyle C. McCraw, M.D.,** died March 27, 1990 at the age of 93. Dr. McCraw, a general practitioner, practiced medicine in Bolivar for many years before retiring in 1984. He served as President of the Missouri State Medical Association in 1969-70. He obtained his medical degree at the St. Louis University School of Medicine in 1929. Dr. McCraw was a member of the Dallas-Hickory-Polk-Dade County Medical Society.

■ **Edward Massie, M.D.,** died February 5, 1990 at the age of 79. Dr. Massie, a cardiologist, practiced medicine in St. Louis for 50 years before retiring in 1988. He joined the faculty of Washington University School of Medicine in 1938 and helped start the "Heart Station" at Barnes Hospital in 1941. He was a professor emeritus at the University and taught there until 1980. He also helped pioneer the application of computers for interpreting electrocardiograms. He obtained his medical degree at the Washington University School of Medicine in 1935. Dr. Massie was a member of the St. Louis Metropolitan Medical Society.



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Final Disciplinary Actions

The following is a listing of final disciplinary actions taken by the State Board of Registration for the Healing Arts. The listing includes actions finalized through November 1989. This information is made available to the public under the provisions of Section 334.101 RSMo.

■ **JOHN K. GRIFFITH, M.D.**, *Arnold, Missouri*
Order dated 11/1/89 — Revocation of Missouri license.
Violation: Section 334.100.2(4j)(4m)(4o)(4p)(5)(6), RSMo Supp. 1987.

■ **JOHN W. KLEMA, JR., D.O.**, *Kansas City, Missouri*
Order dated 10/2/89 — Five (5) years probation.
Violation: Section 334.100.2(3)(8), RSMo Supp. 1988.

■ **RANDALL W. LEWIS, D.O.**, *Fenton, Missouri*
Order dated 11/13/89 — Seven (7) years probation.
Violation: Section 334.100.2(4o), RSMo Supp. 1988.

■ **FLOYD BROWN, D.O.**, *Wright City, Missouri*
Order dated 12/11/89 — Reprimand.
Violation: Section 334.100.2(4j)(5), RSMo Supp. 1988.

■ **JOHN W. KLEMA, JR., D.O.**, *Kansas City, Missouri*
Order dated 10/2/89 — Reprimand.
Violation: Section 334.100.2(3)(8), RSMo Supp. 1988.

■ **DAVID A. MULLEN, D.O.**, *Potosi, Missouri*
Order dated 12/4/89 — Reprimand.
Violation: Section 334.100.2(5), RSMo Supp. 1988.

■ **BARTOLOME C. KAIRUZ, M.D.**, *St. Louis, Missouri*
Order dated 12/11/89 — Stipulate agreement.
Violation: Section 334.100.2(6)(23), RSMo Supp. 1988.

■ **NAPOLEON MAMINTA, M.D.**, *Chesterfield, Missouri*
Order dated 11/17/89 — Revocation of Missouri license.
Violation: Section 334.100.2(4a)(4o)(12)(17), RSMo Supp. 1987.

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Action: Yohimbine blocks presynaptic alpha-2 adrenergic receptors. Its action on peripheral blood vessels resembles that of reserpine, though it is weaker and of short duration. Yohimbine's peripheral autonomic nervous system effect is to increase parasympathetic (cholinergic) and decrease sympathetic (adrenergic) activity. It is to be noted that in male sexual performance, erection is linked to cholinergic activity and to alpha-2 adrenergic blockade which may theoretically result in increased penile inflow, decreased penile outflow or both.

Yohimbine exerts a stimulating action on the mood and may increase anxiety. Such actions have not been adequately studied or related to dosage although they appear to require high doses of the drug. Yohimbine has a mild anti-diuretic action, probably via stimulation of hypothalmic centers and release of posterior pituitary hormone.

Reportedly, Yohimbine exerts no significant influence on cardiac stimulation and other effects mediated by B-adrenergic receptors, its effect on blood pressure, if any, would be to lower it; however no adequate studies are at hand to quantitate this effect in terms of Yohimbine dosage.

Indications: Yocon® is indicated as a sympathicolytic and mydriatric. It may have activity as an aphrodisiac.

Contraindications: Renal diseases, and patient's sensitive to the drug. In view of the limited and inadequate information at hand, no precise tabulation can be offered of additional contraindications.

Warning: Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

Adverse Reactions: Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral a-adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.[1,2] Also dizziness, headache, skin flushing reported when used orally.[1,3]

Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.[1,3,4] 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to ½ tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.[3]

How Supplied: Oral tablets of Yocon® 1/12 gr. 5.4 mg in bottles of 100's NDC 53159-001-01 and 1000's NDC 53159-001-10.

References:

1. A. Morales et al., New England Journal of Medicine: 1221. November 12, 1981.
2. Goodman, Gilman — The Pharmacological basis of Therapeutics 6th ed., p. 176-188. McMillan December Rev. 1/85.
3. Weekly Urological Clinical letter, 27:2, July 4, 1983.
4. A. Morales et al., The Journal of Urology 128: 45-47, 1982.

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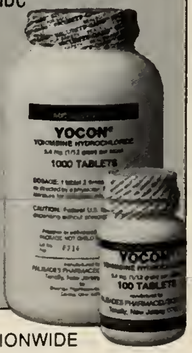

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Physician's Recognition Awards

Thirty MSMA members qualified for the MSMA-AMA Physician's Recognition Award during February 1990. The award, presented by the Missouri State Medical Association and the American Medical Association, is given to those physicians who voluntarily complete 150 credit hours of continuing medical education within a three-year period. Sixty of the credit hours must be earned in Category 1 programs.

Cape Girardeau

James A. Kinder, *Cape Girardeau*

Clay-Platte

Patricia A. Young, *Kansas City*

Cole

Joseph A. Werth, *Jefferson City*

Greene

Richard H. Loeb, *Springfield*
Jon J. Sanchez, *Springfield*

Jasper

Charles H. Bentlage, *Joplin*

Metro Med — Greater Kansas City

Douglas B. Bogart, *Kansas City*
Peter C. Boylan, *Kansas City*
Stanley N. Brand, *Kansas City*
Martin L. Crow, *Kansas City*
Kendrick C. Davidson, *Kansas City*
Lawrence L. Evans, *Kansas City*
Julius M. Kantor, *Kansas City*
John T. Miller, *Kansas City*
Michael W. Raybould, *Kansas City*
Robert V. Spake, *Kansas City*
Charles L. Weinstein, *Kansas City*
Robert K. Weir, *Kansas City*
Jean B. Willoughby, *Kansas City*

Saline

Rashid S. Hamid, *Marshall*

St. Louis Metro

John D. Bauer, *St. Louis*
David A. Caplin, *St. Louis*
Hillard K. Cohen, *St. Ann*
Peter A. Diemer, *St. Louis*
Lily A. Hanes, *St. Louis*
Milton Kardesch, *St. Louis*
David E. Perkins, *St. Louis*
Mickey L. Salmon, *St. Louis*
Harvey Walker, Jr., *Clayton*
Robert A. Young, *Chesterfield*

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In addition, in view of The Copyright Revision Act of 1976, effective Jan. 1, 1978, transmittal letters to the editor should contain the following language: "In consideration of the Missouri State Medical Association's taking action in reviewing and editing my submission, the author(s) undersigned hereby transfers, assigns or otherwise conveys all copyright ownership to the MSMA in the event that such work is published by the MSMA." We regret that transmittal letters not containing the foregoing language signed by all authors of the submission will necessitate delay in review of the manuscript. Please include the title of the article in the transmittal letter.

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Manuscripts should be typewritten, double-spaced, and the original with one copy submitted. Retain another copy for proofreading. Please number the pages of your manuscript. Manuscripts are not returned. Hospital and University appointments of the author(s) should accompany the manuscript. A synopsis-abstract of no more than 75 words should accompany the manuscript. Manuscripts may be submitted on 5¼ or 3½ floppy disks using WordPerfect 4.2 or below.

References

References should be cited in numerical order in the text and arranged at the end of the article in the same order in which they are cited. The reference should give name of author, title of article, name of periodical, volume number, initial page number and year. Authors are responsible for reference accuracy.

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Editorials should be written in clear, concise language. Length should be about two or three pages typed with double spacing.

Letters

Letters will be published at the discretion of the editor, managing editor, and Editorial Board.

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All material other than scientific should be received prior to the first of the month preceding month of publication.

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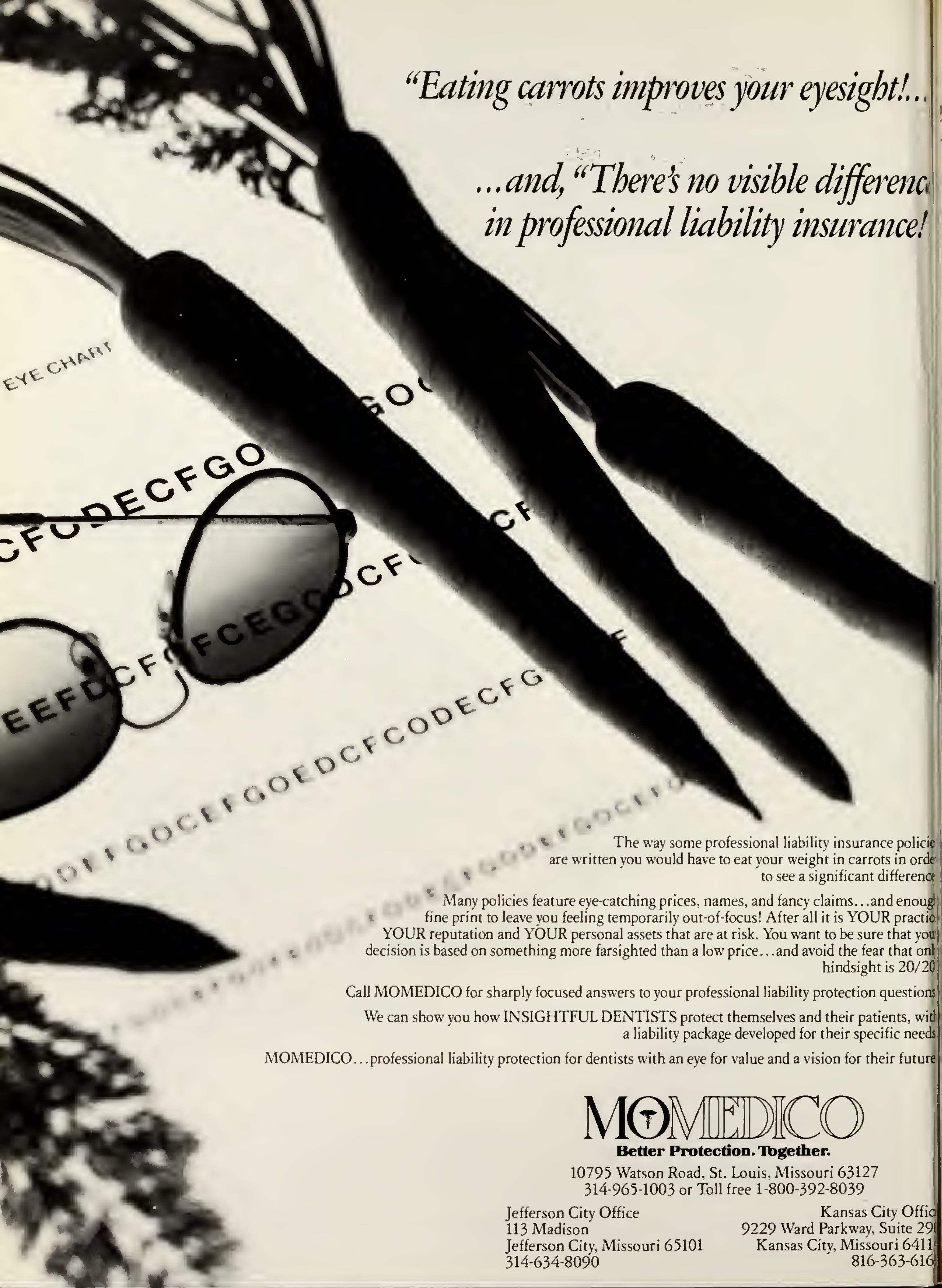

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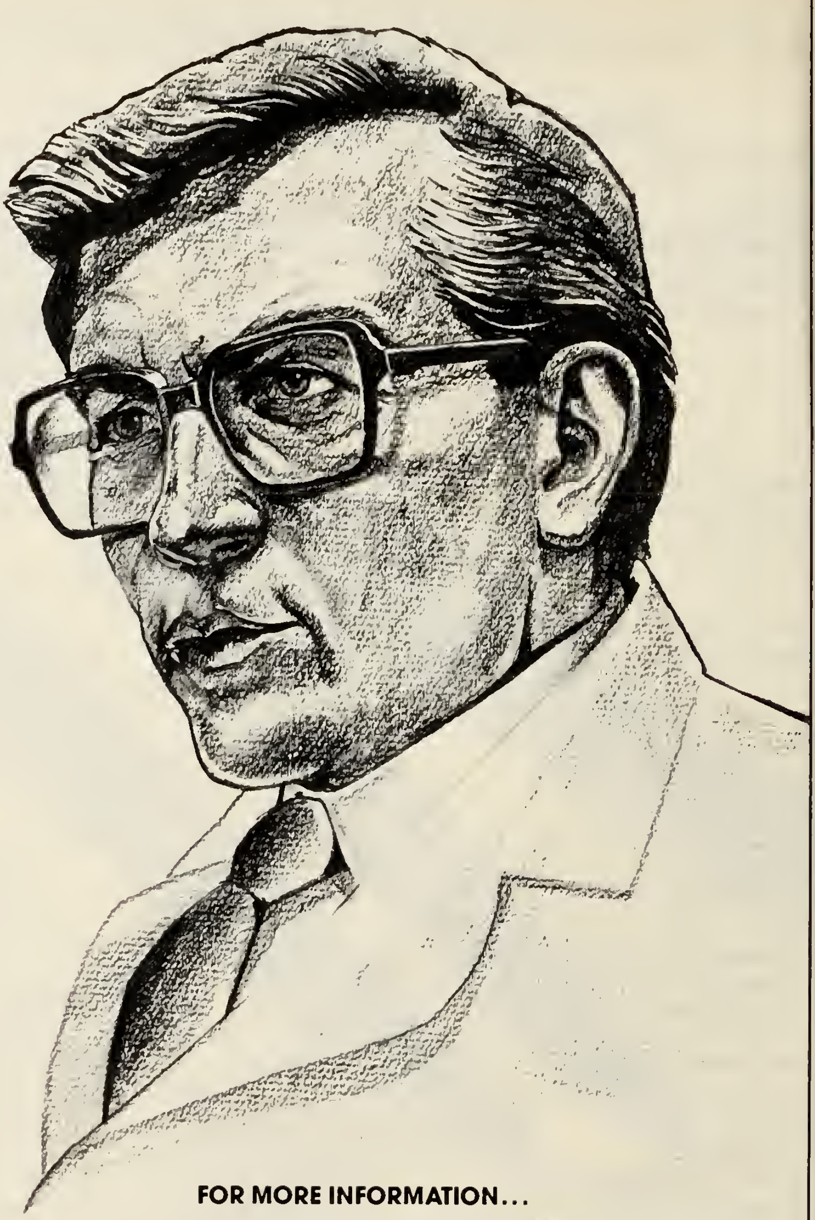

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GUEST EDITORIAL

John C. Hagan, III, M.D.
Kansas City, Missouri

It is time to face the challenge. "Diabetes 2000" has one goal — to eliminate preventable blindness due to diabetes by the year 2000.

Diabetes 2000 — Elimination of Preventable Blindness From Diabetes By the Year 2000

Diabetes Mellitus is a multi-system disease, a major public health problem and a challenge to all physicians. Diabetes is the leading cause of blindness in adults under age 65. Almost 6000 diabetics go blind each year due to diabetic retinopathy. Approximately 70% of diabetics will develop retinopathy after having their diseases for 10 years or more, 12% are blind after 30 years of insulin-dependent diabetes.

Several decades of research have greatly increased our understanding of the pathophysiology of diabetic eye disease, especially diabetic retinopathy. Treatment of many forms of diabetic retinopathy with laser photocoagulation and vitrectomy techniques is now possible. The success of such treatment is dramatic compared to untreated groups. The multi-center studies of timely laser treatment sponsored by the National Eye Institute have shown a 50% reduction in severe visual loss due to proliferative diabetic retinopathy[1] and a 50% reduction of moderately severe visual loss due to diabetic macular edema.[2] As with other organ systems, diabetics who closely control their blood sugars are less likely to develop diabetic eye complications.[3]

As the ability to treat or prevent diabetic eye problems evolves, there is a concomitant need to transmit this knowledge to ophthalmologists treating and caring for diabetics; to other physicians, especially internists, diabetologists and family practitioners managing and counseling diabetics; and lastly to diabetic patients themselves.

In response to these needs, the American Academy of Ophthalmology (AAO) has formulated an ambitious, long-term educational program aimed at both the medical profession and the American public. The project is called "Elimination of Preventable Blindness from Diabetes by the Year 2000" or for short, "Diabetes 2000." As the name suggests, the goal of this project is to eliminate blindness from the preventable and/or treatable forms of diabetic eye disease by the end of this decade.

The first priority of Diabetes 2000 is to educate ophthalmologists and all physicians managing diabetics on the latest technologies and research findings about diabetic eye disease. This will be followed by efforts to educate the diabetic patient about his/her eye problem and need for prevention, detection and treatment. The final phase is the education of the general public on the same matters.

A recent study[4] appearing in ophthalmology literature illustrates the need for increased interspecialty communication. Chase and co-workers found the presence of high normal blood pressure resulted in a higher incidence of development and progression of diabetic retinopathy. Reducing the blood pressure with medications below the 90th percentile for a given age group was found to reduce diabetic retinopathy. Such information is very important to physicians in deciding when to initiate blood pressure treatment in diabetics.

With the ambitious and long-term goals of Diabetes 2000, it is anticipated that many medical specialty groups, government agen-

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■ Guest Editorial

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cies and other diabetic and interested organizations will become involved in the project. Representatives of these various groups will be invited to assist the AAO in the development and implementation of Diabetes 2000.

Much remains to be done. Many diabetics are not regularly examined by an ophthalmologist. All ophthalmologists are not aware of the latest research on treatment of diabetic eye disease. Managing physicians may fail to educate their patients about the importance of regular eye examinations by an opthalmologist or mistakenly believe that their examination with an ophthalmoscope can always detect diabetic retinopathy. Diabetics often are unaware of their need for eye examinations or think they will be able to tell if diabetic retinopathy develops.

The challenges are many, but the goal — elimination of preventable blindness due to diabetes by the year 2000 — is possible with effort and cooperation. What a great way to end one century and begin the next!

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EDITOR'S DESK

by Donald G. Sessions, M.D.
Editor

Changing Mood

He had just returned from a surgical convention and felt great, but he noticed some blood in his stool. He said it somehow looked different than the kind of blood caused by hemorrhoids. He took care of cancer patients himself so he knew he should have it checked out right away.

He was a hard-working doctor with effective sensitivity to the concerns of others. He was a good listener with a great sense of humor. When asked what he had been up to lately he would reply with a twinkle in his eye, "Just humpin' it like everyone else." He was technically proficient but what made him successful was his ability to be with you in such a way that you felt his concentration was fully focused on you.

He consulted a surgeon right away and after a complete examination, was told that he most likely had cancer of the rectum. Recently, as he related this to me, he said that when he heard this he "lost it." The news resulted in an immediate change in his normal mood, and he was washed over with hopelessness and despair. His sense of time disappeared. Things seemed to occur in slow motion. He doesn't remember what the surgeon told him. All he could think about was his impending death and what would happen to his wife and two young children.

He remembers being alone, with tears streaming down his face as he prepared to go home and talk to his wife. He remembers being so detached that he could almost see himself driving home. He walked into the house, burst into tears, and blurted out, "I've got something terrible to tell you." He told her what the doctor said — that he had cancer and was probably going to die. Her response, he relates now with a grin, changed his mood entirely.

"Oh," she said, "when you came in with tears in your eyes and said you had something terrible to tell me, I thought you were going to confess to something awful and ask for a divorce." Somehow her relief on hearing his "terrible" news triggered his sense of humor. It still does.

We sometimes forget just how afflicted we are with the phenomenon of being human. "How is it," we ask ourselves, "that our automatic conversation is so powerful that we worry more about looking good in our relationship and not having someone divorce or reject us than we do about the possibility of our mate dying?" It takes great wisdom, such as shown by our friend, to see that the reaction triggered in his wife was cultural, not personal. The clarity of his observation — that this is how human beings react, instead of listening to a personal rejection of his problem, allowed him to see irony and comedy in the situation.

He is disease free now, almost two years after the onset of his treatment for cancer of the rectum. It is delightful that he can recount how his wife transformed his mood that day when he told her he had cancer. She can even laugh with us about it now. ■

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Letters to the Editor

Stop Duplication of Services

Dear Dr. Sessions:

I am writing in regard to the article titled "Cancer Control and Public Health in Missouri: A Time for Action," by James R. Davis, M.S. et al in the February 1990 issue of Missouri Medicine.

As an activist in cancer detection and surveillance, the article was of interest to me. My primary concern is that while the detection activity is badly needed in Missouri, I question that it should be done through public health facilities. It would seem to me far more reasonable that public health departments receive credits or other reimbursement assurance which could be used for similar services from private physicians. It is not that this service necessarily can be done better, but that such professionals are already in place and available. It would seem to me a waste of public funds to establish freestanding cancer surveillance clinics when professionals are already available to provide such service. One of the problems existing in health care today is the duplication of services. It seems to me improper that publicly funded agencies be purposely established to compete directly with and duplicate services of private professionals.

I wholeheartedly support cancer surveillance in the hope of providing maximal services to all persons regardless of ability to pay, but I feel that it could be provided more economically as suggested above.

Sincerely,
John P. Christy, M.D.

Defining the Practice of Medicine

Dear Dr. Conoyer:

I read your editorial in Missouri Medicine regarding defining the practice of medicine. I call to your attention the fact that the St. Louis Metropolitan Medical Association with its roughly, 2,000 members has defined Peer Review as the practice of medicine with all the hazards, responsibilities and liabilities connected therewith. When an effort is made to finally define what the practice of medicine is to those who don't understand, this fact should be incorporated into the definition, so that the individuals who are engaged in some of these activities can be held responsible publicly for their actions, both to the public and liability wise.

Very truly yours,
Robert E. Kuhlman, M.D.

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President's Page

by Gary A. Dyer, M.D.
MSMA President

For the greatest chances for victory, all physicians must play on one team, The Federation Team, which is organized medicine at the national, state and component medical society level.

MSMA Needs Relentless Man-To-Man Offense

Henry Iba, the basketball coaching legend of Oklahoma State University attributes his success to defensive techniques, ball control, and patterned offenses.[1] It is not well known that he was raised in Easton, Missouri, a small town located a few miles east of St. Joseph, and graduated in 1923, one in a class of 10 students. In 1920 his high school basketball team suffered its greatest defeat, 64-14, at the hands of nearby Stewartsville.[1, 2] From that day on he was determined to find some way for a team of smaller athletic players to win against more experienced teams, or at least not get beaten so badly. He developed relentless man-to-man defense during his first coaching job at Classen High School in Oklahoma City. Meticulous ball control and patterned offenses were added to the package while he coached at Maryville State Teachers College. The "Iba Method" was transferred intact to Oklahoma A and M, later to become Oklahoma State University.

Organized medicine has also relied heavily on defensive strategies for many years. Critics would say that it has not worked as well for medicine as it has for Oklahoma State. One could argue that the problem has been poor ball control, too many turnovers, and lack of planned offenses to complement defensive strategies.

In recent years, teams have appeared in most conferences which play solid defense and, in addition, have tremendous transition skills and fast break offenses. Current teams, modeled after Henry Iba's defensive and ball control teams of old, are finding it much more difficult to win against the transition teams (Missouri, Oklahoma, etc.) of today.

There is also a transition game going on in medicine in the United States. This transition is moving at a pace as rapid as any basketball game, but will last much longer than 40 minutes, and the outcome will be consequential to patients, physicians, and society. The largest teams seem to be the government, big business, third party payors, trial attorneys, hospitals and organized medicine. All teams are playing at the same time, and each is striving for control of the game. Surprisingly, a significant number of physicians cannot seem to decide which team they want to play for. A few do not want to play at all, while others want to play but not spend any time in practice sessions. Some want to break organized medicine into specialty teams and so try to cut individual deals. Some want to play the old game of defense and only respond to crises. They want to forget about the transition game, much less consider a fast break offense. As in basketball, with all teams recruiting better and better talent, it will be difficult for medicine to control the tempo of the game by relying only on defensive strategies.

I would like to suggest that for the greatest chances for victory, all physicians must play on one team, the Federation Team, which is organized medicine at the national (AMA), state (MSMA), and component medical society level. The federation, in turn, must utilize a balanced attack. Defensive strategies must continue to be well developed, transitional

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■ President's Page

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skills must be learned, and, whenever possible, medicine needs to go with a fast break offense.

On the state level, a relentless man-to-man **offense** carried out by component societies and sections would put the MSMA team in the best position to win. Man-to-man offense is not used in basketball, to my knowledge, but in medicine it could have great success. It can be universally applied to almost any game situation, utilizes players of all sizes, skills, and talents, and allows all players to play the entire game. There is no question that it improves ball control and reduces turnovers.

Man-to-man offense has been reasonably effective, but not relentless, in the MSMA Key Contact Program. In other areas it either has not been applied as a team action or used consistently. The three principal arenas where relentless man-to-man offense could benefit MSMA are:

1. **Physician-to-Physician**
    A. Recruiting new members
    B. Reactivating inactive members
    C. Rapid Action Teams (RATS)
    D. Physician Health Program
2. **Physician-to-Patient**
    A. Scientific information
    B. Art of medicine
    C. Political-legislative information
3. **Physician-to-Legislation**
    A. Key Contact Program
    B. Physicians Involvement Program (PIP)
    C. Grass-roots political activities

It is my sincere hope that every Missouri physician will join the Federation team, practice regularly, and participate in man-to-man offense for MSMA. The court is as close as the nearest component medical society.

References

1. Bischoff JP, Mr. Iba, Basketball's Aggie Iron Duke. Western Heritage Association, 1980.
2. Iba HB, Personal Communication, March 9, 1990. ■

■ Practice Management

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Not many insurance companies, including Medicare, require E codes at this time. However, there is no penalty for using them. They can be helpful in providing additional information about the patient's condition. The E code information submitted on insurance claims is transferred to the Center of Disease Control where cause of accidents and poisonings are tracked in the United States. ■

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PRACTICE MANAGEMENT

by Janice K. Woerth, Ph.D.

Do you have a question for Dr. Woerth? Include your questions along with your name, address and phone number and send them to:

Janice K. Woerth, Ph.D.
Practice Management
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P.O. Box 1028
Jefferson City, MO 65102
Or call her direct:
816/587-1125

*Although your name will **not** be used in the journal, please include your name and phone number so that Dr. Woerth may contact you if she needs additional information to answer your question.*

Dear Dr. Woerth:

I've noticed that when I perform two or three surgical procedures during one operative session, the reimbursement from Medicare for the second and third procedures is very low or denied altogether. Is there anything I can do about this situation?

C. G.

Dear C. G.:

There may be several things that you can do to address low reimbursement for second and third surgical procedures performed during one operative session. Most commonly, I find that while claims are being correctly submitted using modifier −51 to indicate multiple procedures, the fee for the second and third procedure is also being reduced to one half on the claim because Medicare only allows 50% on second and third procedures performed during one operative session. When the claim gets to Medicare, the computer automatically cuts the fee for the second and third procedure in half when modifier −51 is used. Often then, the physician is only being reimbursed 25% of the fee listed for the second and third procedures. You may wish to check with your Medicare carrier on how to deal with this problem. I find that many physicians who expect a 50% reimbursement on multiple procedures are not reducing their charges on the claim, knowing that the second and third procedure fee will be automatically cut in half by Medicare. By not reducing the fee for the second and third procedures, the bill appears inflated. A "multiple procedures adjustment" on the patient's statement can be made to address this inflation. These "multiple procedures adjustments" should be specially noted so that it does not appear that your adjustments for Medicare have greatly increased.

Another solution for low reimbursement of multiple procedures is using specific diagnoses to establish medical necessity for the second and third procedure. Medicare is only required to pay for those services that are medically necessary. The necessity for the second and third procedure must be supported by complete and specific diagnoses.

Finally, low or no reimbursement for multiple procedures can result when the surgical code has been "unbundled." This means that the second and third procedures should have been included as part of the first surgical procedure and not billed as separate procedures. To avoid "unbundling," the definitions of the surgical procedures listed in the CPT book and the notes/explanations in the various sections of CPT should be carefully read.

Dear Dr. Woerth:

What are E codes and when should they be used?

L. L.

Dear L. L.:

E codes are used to document the cause of an accident or poisoning. They are never to be used as the first diagnosis on a claim as they provide an explanation for the patient's injury or condition. The patient's injury or condition is the first diagnosis listed on the claim. The E codes can be located by using either Section 2 or 3 in Volume 2 of the ICD-9-CM. Section 2 is the Table of Drug and Chemicals where poisoning codes can be found. Section 3 is the Index to External Causes where the cause of an accident or injury can be found. Codes listed in Volume 2 should always be cross-referenced with Volume 1. The E code listing starts on page 930 of ICD-9-CM Volume 1.

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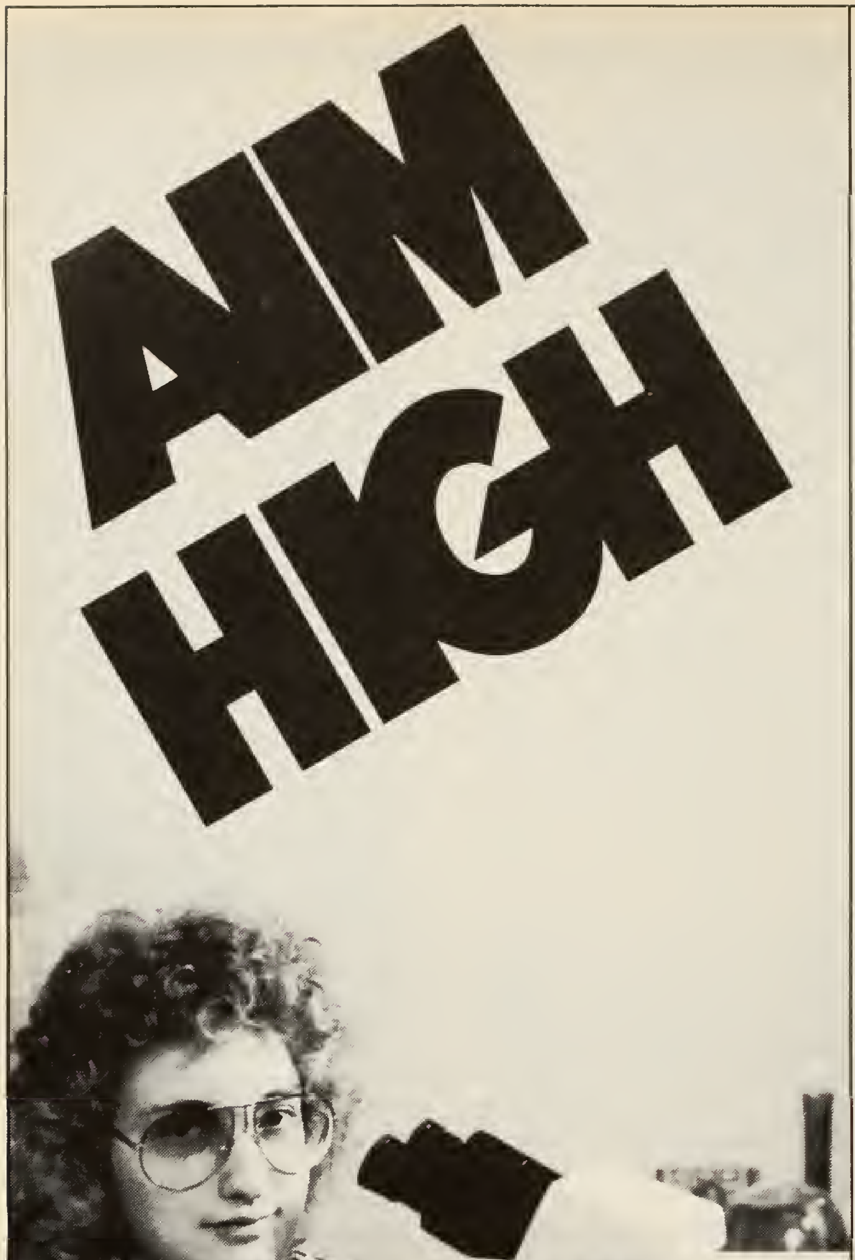

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SPECIAL SERIES

Fungal Infections in Patients Infected with HIV

William G. Powderly, M.D.
St. Louis, Missouri

HIV-positive patients are at risk for a number of serious fungal infections. The author reviews the common fungal infections and stresses the importance of early detection and appropriate treatment.

Fungal infections are extremely common in patients infected with HIV. This article will review the presentation and management of these problems.

Candidiasis

Candidiasis is virtually a ubiquitous problem in AIDS. Ninety percent of patients have at least one episode of mucocutaneous candidiasis. Oral candidiasis is the most common manifestation and may be the first sign that an individual is HIV-positive. The development of oral candidiasis is a sign of immunological incompetence and usually indicates a CD4 lymphocyte count of less than 400 cell/mm^3. Thrush also has prognostic significance in that its appearance in a previously healthy individual usually indicates acceleration of the disease and is a warning sign of an increased risk of progression to AIDS. The diagnosis is made by examination of the oral cavity, where there are usually white plaques on an erythematous base. Most patients complain of sore throat and moderate discomfort in swallowing. Recurrent oral thrush becomes a problem for many HIV-infected individuals.

Initially, when the disease is mild and the patient is still relatively immunocompetent (CD4 counts greater than 200 cell/mm^3), oral candidiasis can be managed with local therapy (e.g., clotrimazole troches five times daily). However, *Candida albicans* is never eradicated and recurrence is the norm. As the HIV disease progresses and the patient becomes more immunosuppressed, recurrences become more frequent, the disease-free interval decreases and local therapy becomes ineffective. In this situation, systemic antifungal therapy with ketoconazole, 200 mg daily, or fluconazole, 50-100 mg daily, for 10-14 days should be used. Vaginal candidiasis can be a particularly distressing problem in women with HIV infection. It should be managed in a manner similar to oral infection.

The onset of severe dysphagia in a patient with oral candidiasis indicates esophageal involvement. Esophageal candidiasis occurs in 10%-20% of patients with AIDS and is characterized by pain on swallowing, retrosternal pain and usually weight loss. On X-ray film and endoscopy, the esophagus is usually diffusely ulcerated. Patients with oral candidiasis and esophageal symptoms should be treated presumptively with either ketoconazole, 400 mg daily, or fluconazole, 200 mg daily for at least two weeks. (It should be noted that antacids or H2-blockers administered concurrently will affect the absorption of ketoconazole.) Patients who fail to respond to this therapy should be evaluated endoscopically to detect herpetic or CMV esophagitis. Amphotericin B may be necessary for refractory or severe esophageal candidiasis.

Systemic invasive candidiasis is rarely seen in patients with AIDS and usually occurs in those patients who develop neutropenia.

Cryptococcal infections

Disseminated cryptococcosis is the third or fourth most commonly diagnosed life-threatening opportunistic infection, occurring in about 6%-10% of patients with AIDS. The organism is an encapsulated yeastlike fungus that is ubiquitous and can be isolated from many environmental sources, particularly from soil and the excreta of pigeons and other birds. Cryptococcosis is presumed to be a primary infection rather than a reactivation of previously acquired disease (as occurs for most AIDS-associated opportunistic infections). The organism gains access to the host via the respiratory route and in the presence of immunodeficiency, disseminates widely, especially to the central nervous system. Ninety percent of patients with AIDS infected with *Cryptococcous neoformans* develop meningitis. However, acute cryptococcal infection of almost every other organ has been described.

Cryptococcosis is rarely the first opportunistic infection in a patient with AIDS. Cryptococcal infection in AIDS is associated with profound immunodeficiency, with the CD4 count almost invariably less than 200 cells/mm^3. It is worth noting, too, that simultaneous occurrence of cryptococcosis and other opportunistic infection, especially *Pneumocystis* pneumonia, is not unusual in patients with AIDS.

In non-HIV-infected hosts, cryptococcal infection classically presents as a chronic meningitis. In AIDS, however, meningeal symptoms and signs are unusual, occurring in only about 25% of patients. Most patients present with fever, malaise and headache. A minority of patients (30%) also have symptoms compatible with encephalopathy such as altered mentation, personality changes and memory loss. Focal neurologic signs are unusual. Because of this subtle presentation, a spinal tap should always be considered in an HIV-infected patient who has fever and headache or change in mental status.

The normal response to infection is usually markedly blunted in patients with AIDS. CSF analysis characteristically shows numerous organisms and few lymphocytes. In a recent study from San Francisco General Hospital, the mean number of lymphocytes in the CSF was 4. Antigen titers in the blood and CSF may be greater than 1:10,000, levels that are rarely seen in other patient populations. Indeed, the serum antigen may be an extremely useful screening test in febrile patients.

Response to therapy also differs from that seen with other patient populations. In non-AIDS populations, the initial response to combination therapy with amphotericin B and 5-fluorocytosine is approximately 90%, and relapses are rare. In contrast, the initial response of patients with AIDS and cryptococcal infection to standard therapy has varied in published reports from 40%-80%. Equally importantly, cryptococcal infection in AIDS is characterized by a high relapse rate (20%-60%) if the patient does not receive chronic suppressive therapy. An important recent observation is that standard therapy successful in sterilizing the cerebrospinal fluid, may not eradicate infection from the prostate and may then serve as a focus for relapse.

Cryptococcal meningitis and disseminated cryptococcosis in non-AIDS patients responds well to combination therapy of amphotericin B (0.3 mg/kg/day) and 5-fluorocytosine (5-FC) for 4-6 weeks. This combination of antifungal agents has rarely found favor among physicians treating patients with AIDS. Many patients cannot tolerate 5-FC, either because of initial neutropenia or because of the development of neutropenia during therapy. The use of 5-FC allows use of a lower dosage of amphotericin B. Consequently, if amphotericin B is used alone, a higher dosage of amphotericin B (0.5 mg/kg/day or greater) should be employed. If 5-FC is used, a lower than usual dosage (e.g. 75 mg/kg/day) may be more appropriate.

Because of the toxicity associated with amphotericin B (fevers, hypotension, and renal toxicity) and the need for intravenous administration, there has been considerable interest in the new triazoles, fluconazole and itraconazole, as alternative therapy for patients with AIDS. Itraconazole, which is still investigational, has been reported effective in a small number of uncontrolled reports. Much attention has been focused on fluconazole, especially since cerebrospinal fluid levels are 80%-100% of those found concomitantly in serum and since therapeutic levels can be achieved with oral administration. Its exact role in the management of cryptococcal infection is still a little uncertain. Fluconazole, 200-400 mg/day, is effective in treating patients with acute cryptococcal meningitis or in the prevention of relapse after primary therapy. However, because of concerns that some patients with cryptococcal meningitis may not respond as well if treated initially with fluconazole, I believe that the most prudent approach for acute cryptococcal infection is a short course of amphotericin B (e.g., 300-500 mg) followed by lifelong suppressive therapy with fluconazole. Although weekly amphotericin B (1 mg/kg) is the regimen most commonly used for maintenance suppressive therapy, recent studies have shown that fluconazole, 200 mg/day, is also effective in maintaining remission. Because it is orally active, fluconazole is the drug of choice for maintenance treatment.

Histoplasmosis

Because histoplasmosis is endemic in the Mississippi basin, it is not surprising that histoplasmosis has been a common complication of AIDS in Missouri. Indeed, histoplasmosis has been reported to the Missouri Department of Health as commonly as cryptococcosis. This incidence of infection is much greater here than in parts of the country where the fungus is not endemic (such as the east and west coasts). It is assumed that most cases of histoplasmosis in AIDS represent reactivation of previously acquired disease, but the high incidence of AIDS-associated histoplasmosis in Kansas City and Indianapolis, coincident with outbreaks of the disease in the general population, suggests that primary infection also occurs.

Histoplasmosis in AIDS is usually a disseminated infection. The most common manifestation is fever, and histoplasmosis should be considered in the differential of any patients with AIDS who has an unexplained prolonged fever. Local or generalized lymphadenopathy, hepatosplenomegaly and ulcerating skin lesions all occur. Some patients may present with an acute illness resembling septic shock and succumb rapidly. Central nervous system involvement with meningitis is a rare but important complication. Laboratory findings may include anemia or neutropenia (reflecting bone marrow involvement by the fungus) and hepatitis. The diagnosis is usually made by blood cultures or examination and culture of bone marrow aspirate and biopsy.

The treatment of choice for disseminated histoplasmosis remains amphotericin B, usually aiming to give a total dose of 1.5-2 grams total dose as primary therapy. Relapse is common and lifelong suppressive therapy should be given. Although ketoconazole has been used, the relapse rate with this is still high (50%) and weekly amphotericin B (1 mg/kg) is preferable. The investigational triazole antifungal, itraconazole, shows promise in ongoing clinical trials and may be an important option in the future. There is little experience with the use of fluconazole in histoplasmosis.

Other Fungi

Reactivation infection due to *coccidioidomycosis* is increasingly common in the Southwestern United States where the fungus is endemic. It is occasionally seen elsewhere in patients who have lived in the endemic areas (Arizona, New Mexico, Southern California and West Texas). This fungal infection behaves aggressively and patients have pulmonary disease, skin lesions and fever. The treatment of choice remains amphotericin B, although the role of the azole antifungals is currently under investigation.

Although the Mississippi valley is also an endemic region for *blastomycosis,* this fungal infection has remained a rarity in patients with AIDS. This situation may change in future years. In those cases that have occurred, the disease involved cavitatory pulmonary lesions, skin lesions and fever. Amphotericin B is also the treatment of choice for *blastomycosis.*

Aspergillosis is rarely seen in HIV patients and usually is a late complication in patients who have developed neutropenia as a complication of chemotherapy. Most reported cases have been disseminated and fatal.

The Author

WILLIAM G. POWDERLY, M.D.,

Dr. Powderly is affiliated with the Department of Medicine at Washington University School of Medicine and is clinical director of the AIDS Clinical Trials Unit at Washington University.

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SPECIAL SERIES: Chronic Disease Reports

Smokeless Tobacco Use Among Missouri Youth

Ross C. Brownson, Ph.D.,
Thomas M. DiLorenzo, Ph.D.,
Columbia, Missouri
and Mark Van Tuinen, Ph.D.
Jefferson City, Missouri

The authors in this paper suggest that unless there are substantial increases in public education, health education in schools, and health care provider activity in smokeless tobacco prevention and cessation, we may experience an epidemic of oral cancer in the near future.

The serious health consequences of smokeless tobacco use are now well established.[1-3] Oral cancer has been shown to occur several times more frequently among smokeless tobacco users than nonusers, and the excess risk for cancers of the cheek and gum may reach fifty-fold among long-term users.[4] In addition, smokeless tobacco use can cause oral leukoplakias and gingival recession and can lead to nicotine dependence or addiction.[1]

During most of this century, use of smokeless tobacco was relatively rare and confined primarily to rural areas and specific occupational groups such as miners and agricultural workers.[5] However, in recent years, use of smokeless tobacco has increased dramatically, particularly among children and adolescents.[1] For example, national use of oral snuff among teenage boys increased ten-fold between 1970 and 1985.[6]

Two major types of smokeless tobacco are used in the United States — moist oral snuff and chewing tobacco. Snuff is finely shredded tobacco to which various sweeteners and flavorings are added.[5] Chewing tobacco is much coarser than snuff and is available in three forms: small strips of loosely packaged "loose leaf," compressed "bricks" or "plugs," or twisted ropelike strands.[5] In this article, the term smokeless tobacco refers to both moist oral snuff and chewing tobacco.

We report on smokeless tobacco use by Missouri school children, based on a recent statewide survey of tobacco and drug use.

Methods

The study population was a representative sample of Missouri 5th, 8th and 12th graders from public schools. The schools surveyed were classified as rural or urban based on county-specific U.S. Census classifications of Standard Metropolitan Statistical Areas (SMSAs)[7] (*i.e.*, urbanized areas with at least 50,000 persons). The rural stratum included 98 non-SMSA counties whereas the urban stratum included the St. Louis SMSA, the Kansas City SMSA, and six smaller SMSA counties. The sample contained 44 rural and 34 urban schools. Of these, 23 were 5th grade, 28 were 8th grade, and 27 were 12th grade schools. Two rural and five urban schools declined participation and were replaced with schools of similar enrollment in the same counties.

The questionnaire for the study was a computer-scored instrument that included questions on de-

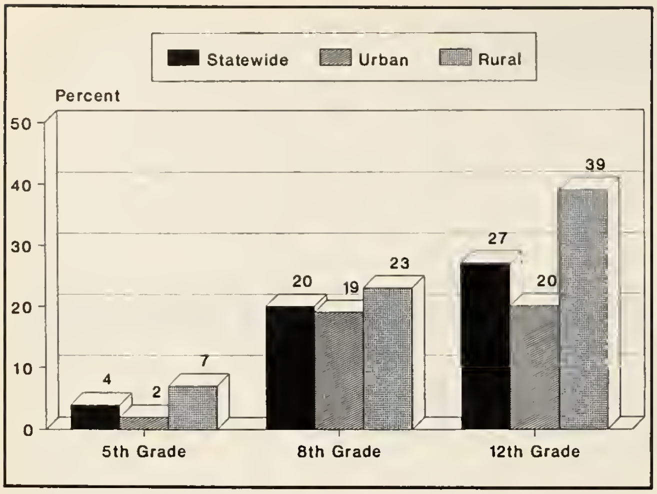

Fig. 1. Use of smokeless tobacco in the previous 30 days by 5th, 8th, and 12th grade males, Missouri, 1988.

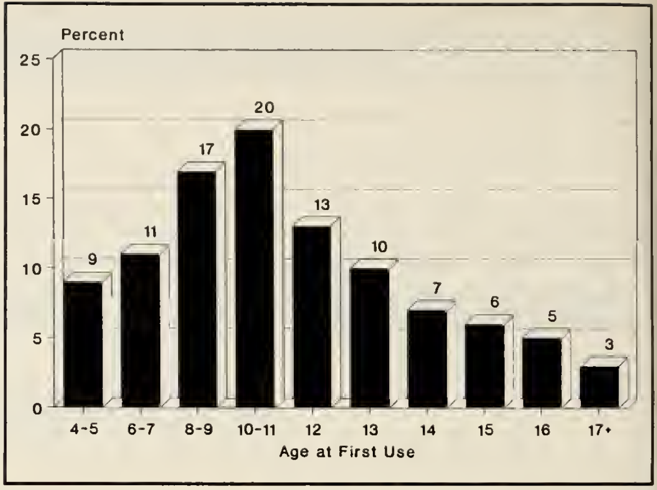

Fig. 2. Age at first use for males who had tried smokeless tobacco, all grades combined, Missouri, 1988.

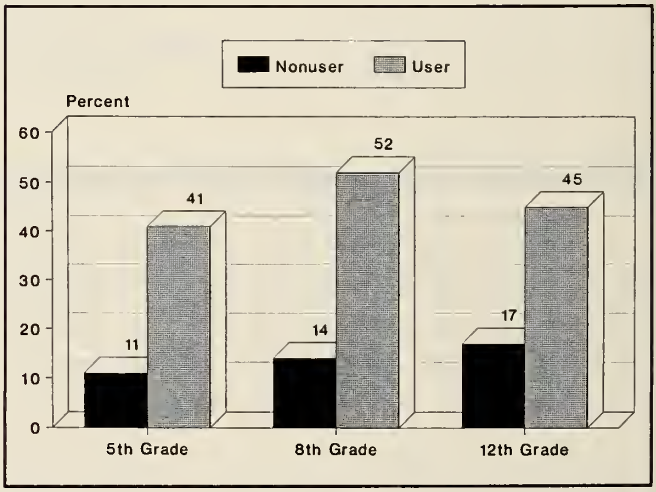

Fig. 3. Proportion of 5th, 8th, and 12th grade males who said using smokeless tobacco was safer than smoking, Missouri, 1988.

mographics, tobacco use, alcohol and drug use, and selected correlates of substance use. More difficult or inappropriate questions (*e.g.*, those pertaining to harder drug use) were placed at the end of the questionnaire, and 5th graders were asked to skip this section.

Two trained research assistants administered the questionnaires in the classroom, with the teacher present, during a six-week period in February and March of 1988. Within each grade level the schools were sampled systematically and proportional to enrollment. In the smaller schools, entire grades were surveyed; in larger schools, administrators were asked to select classes that were either mandatory or representative of the school's student population.

Completed questionnaires were manually scanned for stray marks and frequent inconsistencies. Eighteen questionnaires could not be used due to extensive missing data, stray marks, or frequent inconsistencies. Final analyses were based on data from 5,431 students.

The number of missing items and response conflicts was relatively low in this survey. Nonetheless, to facilitate weighting of the responses to develop population rates of tobacco use, the demographic items and the most important tobacco use items were systematically edited and corrected. The methods and results of record editing are described in more detail elsewhere.[8] As a check on the edited data set, all analyses were re-run on a copy of the data that excluded conflicting and missing items. Since no meaningful differences in results were found, the findings based on the edited data sets are presented. A specialized program for survey data analysis, SESUDAAN,[9] was used to obtain substance use prevalence measures. Results are presented only for males, since the frequency of smokeless tobacco use among females was extremely low.

Results

The use of smokeless tobacco in the 30 days preceding the survey is shown in Figure 1. Statewide use rates among male 5th, 8th, and 12th graders were 4%, 20%, and 27%, respectively. For each grade surveyed, use was higher in the rural areas than in urban areas. Among 12th grade males, the use of smokeless tobacco was nearly twice as high in rural as in urban areas. The highest rate of monthly use (39%) was shown for rural 12th grade males.

Figure 2 presents data on the age at first use of smokeless tobacco for those respondents who had tried the substance. The majority of those who had tried smokeless tobacco did so before the age of 12. The mean age at first use of smokeless tobacco was 10.7 years. The mean age at initial use in the rural areas was 10.4 years, versus 11.4 years in the urban areas.

Regression analyses were conducted to determine the major predictors of smokeless tobacco use.

Significant predictors at the $p < 0.01$ level included older age, lower grade point average in school, smokeless tobacco use by the father, a higher percentage of friends who used smokeless tobacco, and an earlier age at initial use.

Students who had used smokeless tobacco in the past 30 days were much more likely than nonusers to perceive smokeless tobacco as safer than smoking (Fig 3). More than half (52%) of 8th grade smokeless tobacco users felt that using smokeless tobacco was safer than smoking.

Comment

Previous studies of smokeless tobacco have shown that the prevalence of use varies widely across the U.S. and highest use typically occurs in more rural areas.[10] In Missouri, use of smokeless tobacco is clearly a widespread problem among children and adolescents. More than one-fourth (27%) of 12th grade males were current users of smokeless tobacco by our survey definition of use.

Our data show that use of smokeless tobacco begins at extremely young ages. Average age at initial use was 10.7 years, which is slightly lower than that reported (11.2 years) in a recent study from Oregon.[11] Regular use of smokeless tobacco begins approximately one year following initial use.[11] These data suggest that health education efforts need to begin at extremely young ages to prevent the onset of smokeless tobacco use.

A complex array of social influences probably determines the onset and continuation of smokeless tobacco use. In our study, users were more likely than nonusers to have lower grades in school and to have fathers and friends who use smokeless tobacco. All of these factors have been described as important correlates in previous studies.[12-15]

Our study did not address the roles of advertising and product promotion in initiating smokeless tobacco use among youth. This is a controversial area and one in which it is difficult to measure effects accurately. One of the few reports to examine this area was a large cross-sectional study of Texas schoolchildren.[16] Researchers found that 42% of respondents felt that advertisements influenced teenagers to start using smokeless tobacco.[16] A recent review of smokeless tobacco advertising practices[17] found that although the industry claims not to market to children and adolescents, a number of promotional activities appear to target youth. This is an area that deserves further study.

In our Missouri data, considerably more smokeless tobacco users than nonusers felt that smokeless tobacco was safer than smoking. Similar findings have been reported among Alabama youth.[18] The perception of smokeless tobacco as a safe substitute for smoking is not surprising considering the extensive association between smokeless tobacco use and sports heroes[19] and the widespread knowledge of the health hazards of cigarette smoking.[20] There have even been suggestions in the medical literature that smokeless tobacco is a safe, acceptable alternative to cigarette smoking.[21, 22]

Our findings and other recent studies suggest that unless there are substantial increases in public education, health education in schools, and health care provider activity in smokeless tobacco prevention and cessation, we may experience an epidemic of oral cancer in the coming decades.

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The Authors

ROSS C. BROWNSON, Ph.D.
THOMAS M. DiLORENZO, Ph.D.
MARK VAN TUINEN, Ph.D.

Dr. Brownson and Dr. Van Tuinen are both affiliated with the Missouri Department of Health. Dr. Brownson is the director of the Division of Chronic Disease Prevention and Health Promotion, Columbia, Missouri, and Dr. Van Tuinen is the chief of the Bureau of Health Services Statistics, Jefferson City, Missouri. Dr. DiLorenzo is an associate professor in the department of psychology at the University of Missouri-Columbia.

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Reprints

Ross C. Brownson, Ph.D.
Division of Chronic Disease Prevention
and Health Promotion
Missouri Department of Health
201 Business Loop 70 West
Columbia, Missouri 65203

Improving Perinatal Outcome For Rural Missouri

Michael S. Cardwell, M.D.
John W. Gay, M.D.
Columbia, Missouri

Improving perinatal outcome in rural Missouri as reflected by a lowering of the perinatal mortality rate is a realistic and achievable goal for the state. The authors present information and data with suggestions for reaching this goal.

Missouri ranks 22nd among the 50 states in overall perinatal mortality rate (PMR).[1] The PMR, defined as stillbirths plus neonatal deaths per 1000 births, is an accurate indicator of the adequacy of prenatal care.[2] Adequate prenatal care can lead to a decreased PMR. Among the factors responsible for the high PMR in Missouri are the lack of regionalization of perinatal services; a large rural population; lack of physicians and other providers of obstetrical services, especially to the indigent; and the inadequacy and maldistribution of state funding for prenatal care. We address these four factors in detail and discuss proposals for improving perinatal outcome for rural Missouri.

The Present Situation

Rural Missouri is defined as the entire state, excluding metropolitan Kansas City and metropolitan St. Louis. Obstetrical services are provided by 107 hospitals in the 114 counties of Missouri.[3] However, many counties in the southern third of the state and the northeast corner have no local hospital facilities. In 1986 there were 77,105 births in Missouri, and the PMR was 13.1 per 1000.[4]

The great majority of pregnant women in rural Missouri are considered high-risk obstetrical patients because of their low socio-economical status.[5] Other contributing factors include late or no prenatal care, poor nutritional status during pregnancy, and young age at time of conception.[6] Providing adequate prenatal care to these women could greatly decrease the state's overall PMR.

Lack of Perinatal Regionalization

For years, perinatal regionalization has been considered the ultimate goal in providing specialized services to high risk obstetrical patients and their babies.[7] Basically, perinatal regionalization involves placing intensive and highly specialized or technical services in regional "perinatal centers" or "Level III" hospitals.[8] Community hospitals continue to manage the routine (Level I) or less complicated cases (Level II).

A designated perinatal center is responsible for accepting maternal and neonatal transports in its region. Also, the perinatal center is responsible for "outreach education" on current developments in perinatal and neonatal medicine.

The perinatal center should be equipped to handle all complicated perinatal and neonatal problems. Also, the center should have a fully trained staff of medical and nursing specialists and other allied health professionals to provide the highest level of care. The perinatal center and its referring hospitals may be formally linked by "letters of agreement." These documents specify that the referring hospital must refer certain patients with complications to the perinatal center for management. The perinatal center is obligated to accept these patients or provide alternatives if bed space is unavailable. Referral and acceptance is totally independent of the patient's financial status.

Perinatal regionalization has proven effective in reducing the PMR in the states of Kansas, Alabama, Louisiana, and Tennessee.[9-13] These states have passed laws that mandate statewide perinatal regionalization.

Several attempts have been made to bring regional perinatal services to Missouri. However, because of lobbying in the state legislature by special interest groups, the perinatal regionalization proposal has always been defeated. Their objections to the proposal have included the loss of patient's and physician's choice in hospital selection, and the possible loss of an individual hospital's prestige in the "market" if it received a level of care designation.[4] At present, there is no active proposal before the state legislature for perinatal regionalization.

Missouri's Large Rural Population

Missouri is predominantly a rural state. Many counties are without hospitals and many are without physicians who provide obstetrical services. In some instances, a high-risk obstetrical patient must travel more than 100 miles in order to obtain prenatal care. This situation is particularly prevalent in the Cape Girardeau area.

In many counties, local health departments provide prenatal care to patients through the Missouri Department of Health. However, funds are limited and ancillary services, such as obstetrical ultrasound examinations and antenatal fetal testing are not available locally. Even when prenatal care is provided, patients must still travel great distances to be delivered at a hospital with obstetrical services.

Many rural counties are sparsely populated but are still served by a local hospital. Because of financial constraints, the hospital may not provide obstetrical services. In 1984, twenty-one hospitals in Missouri delivered fewer than 100 babies in the calendar year.[15] By 1989, most of these hospitals had closed the obstetrics department or were in the process of doing so.[15]

Lack of Physicians

Two factors have led to the decline in the number of physicians providing obstetrical services to rural Missouri women, the "malpractice crisis," and the low state Medicaid reimbursement for professional services. These factors are not unique to Missouri, but their impact is greater because of the larger indigent population in Missouri.

Missouri obstetricians pay approximately $60,000 per year for medical malpractice insurance. In the past several years the premiums for some obstetricians and family practitioners providing obstetrical care have increased by 100% to 300%. Many physicians have eliminated obstetrical services from their practices in order to reduce their overhead.

Many physicians have increased their professional fees to absorb the increase in medical malpractice premiums. However, for rural patients on fixed incomes and no health insurance, the cost of prenatal care has become prohibitive.

Medicaid reimbursement for global prenatal care is not sufficient ($525) to cover the overhead of many physicians, and some have eliminated Medicaid patients from their practice. The patients most at risk for adverse perinatal outcome are those without access to physicians because of financial barriers.

There is also a feeling among physicians that Medicaid patients are more prone to sue for suboptimal perinatal outcomes, making physicians unwilling to accept Medicaid patients. However, a recent survey by the American College of Obstetricians and Gynecologists did not confirm this fear.[16] Also, many physicians are giving up obstetrical practice because of the long statute of limitations (age of majority plus 2 years) for obstetrical malpractice claims and the dread of being sued decades after the delivery of a baby.

The state of Missouri is also hindered by the lack of effective statutes concerning the practice of nurse midwifery. As a matter of fact, the question of whether certified nurse-midwives (CNMs) can legally practice in Missouri is unsettled. In many states, including Kentucky and Texas, much of the prenatal care and delivery care of indigent patients is provided by CNMs. Certified nurse-midwives can provide reasonable and cost-effective care.[17] However, today no hospitals in Missouri allows CNMs to practice.

Three factors are responsible for the reluctance to accept CNMs: confusion of CNMs with lay midwives; physicians' fear of competition from CNMs; and the hesitancy of CNMs to practice in a rural area without adequate physician support. Of these factors, physicians' fear of competition has been the most difficult to overcome, although some progress is being made.[18] Certified nurse-midwives are now associated with several clinics and private practices throughout the state, but for the most part they are relegated to providing "routine" prenatal care, and not intrapartum care or high-risk prenatal care.

Inadequate and Maldistributed State Funding for Prenatal Care

The state of Missouri allocates only a small percentage of its budget to health care — in 1989, only 1.9%. Health services are given a low priority by the state legislature.

Many rural residents do not qualify for Medicaid because of the high "poverty" level cutoff. The working poor are trapped in a double bind; $3.35 an hour is enough to disqualify them from Medicaid but is not enough to buy food, shelter and minimal health care. Even patients with Medicaid have difficulty obtaining prenatal care because of the low rate of reimbursement.

A separate program in Missouri covers certain high-risk obstetrical patients. The Missouri High Risk Maternity and Child Care Program was established by statute and provides care for patients with the following obstetrical complications: multiple gestation, premature rupture of membranes, Rh sensitization, preterm labor, and diabetes during pregnancy.[19] However, to qualify for the program the patient must first have essentially exhausted every other means of payment, including Medicaid. Further, only a small proportion of high-risk obstetrical patients falls into one of the five covered categories. Funding for this program is limited and is usually depleted long before the end of the fiscal year.

Achieving Optimal Perinatal Outcome for Missouri

Providing adequate prenatal care to rural Missourians, and the ultimate goal of lowering the PMR, is a formidable task.

We believe perinatal regionalization is essential to provide cost-effective and organized perinatal-neonatal care to rural Missourians. Petty disputes among hospitals over the possible erosion of "market share" must be dismissed. Designated level of hospital care should not be used as a marketing tool. Physicians providing obstetrical care and the public must be educated concerning the benefits of perinatal regionalization.

The Missouri state legislature must mandate perinatal regionalization. In 1990, there are enough model systems in surrounding states so that we need not "reinvent the wheel." Designation of hospitals by level of care must be made on the basis of their realistic ability to provide services; hospitals should not duplicate services just to "keep up with the Joneses."

More state and local funding is needed to establish local clinics that can provide prenatal care even to high-risk obstetrical patients. County health departments operate in most Missouri counties. Local physicians and nurses with obstetrical experience could be recruited to staff these clinics. Decentralization of services to high-risk patients is now done in many localities. For example, mobile obstetrical ultrasound units serve many small hospitals in Missouri. A fleet of these units could effectively cover most of rural Missouri. Antenatal fetal testing using portable equipment with transmission via telephone lines to a perinatal center for interpretation and disposition is also possible.[20]

In order to entice more physicians to provide obstetrical care in rural Missouri, two prerequisites must be met. First, Medicaid reimbursements must be increased to realistic levels, comparable with commercial insurance reimbursement rates. Second, physicians who care for indigent patients must be indemnified by the state or federal government.

We feel certified nurse-midwives must be recognized as providers of obstetrical care in the state of Missouri. State statutes concerning the practice of nurse-midwifery must be enacted. Both the public and the medical profession must be educated about CNMs. Hospital Boards administrators must accept CNMs as vital members of the health care team.

Equitable prenatal care to all Missourians should be a priority of the state. The state budget must be revised to reflect this prioritization. Although opponents to this proposal would exclaim that there is not enough money to meet the needs of such a program, one can hardly agree. Adequate prenatal care can prevent many serious complications such as untimely preterm delivery. The resultant savings in neonatal intensive care cost and long term expenditures for chronically ill infants could more than pay for adequate prenatal care for those rural Missouri women in need of such services.

Finally, Medicaid funding and the "Missouri High Risk Maternity and Child Care Program" should be coordinated in such a fashion as to provide prenatal services in a less restricted manner. Poverty level cutoffs should be lowered in order to qualify more needy women in the programs. Personal and family financial resources should not have to be totally ablated before eligibility is established.

Conclusion

Improving perinatal outcome in rural Missouri as reflected by a lowering of the perinatal mortality rate is a realistic and achievable goal for the state. Four factors responsible for the present high PMR were discussed: 1. lack of state perinatal regionalization; 2. a large rural population; 3. lack of physicians and other providers of obstetrical services, especially to the indigent; and 4. the inadequacy and maldistribution of state monies for prenatal care. Factors related to the high risk status of rural Missouri women were delineated.

Solutions and alternatives to the above problems were proposed. Many of these same problems have been dealt with effectively in surrounding states. The ultimate goal of achieving a lower PMR for Missouri must be approached in an orchestrated manner. Each of the aforementioned factors must be considered as only a facet of the entire task ahead of us — adequate prenatal care for all rural Missourians.

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The Authors

MICHAEL S. CARDWELL, M.D.
JOHN W. GAY, M.D.

Dr. Cardwell is assistant professor of obstetrics and gynecology and director of Maternal-Fetal Medicine at the University of Missouri-Columbia School of Medicine. Dr. Gay is also an assistant professor of obstetrics and gynecology at the MU School of Medicine.

Reprints

Michael S. Cardwell, M.D.
Department of Obstetrics-Gynecology
N610 Health Sciences Center
University of Missouri-Columbia
One Hospital Drive
Columbia, MO 65212

Medicolegal Aspects of Testicular Torsion

Saul Boyarsky, M.D., J.D.,
George F. Steinhardt, M.D.,
and Robert Onder, M.D.
St. Louis, Missouri

Testicular torsion is a surgical emergency which requires prompt exploration, detorsion, and bilateral orchiopexy. The authors present information helping to explain why testicular torsion often leads to lawsuits for physicians.

Torsion of the testicle is the most common pediatric genitourinary emergency. In a general hospital, three to four patients a year may present with testicular torsion; salvageability is approximately 50%.[1] The ischemia causes pain, swelling, and scrotal edema, the classic signs of torsion of the testis.[2] Testicular torsion often leads to lawsuits because of the misunderstandings and disappointments associated with this surgical emergency.

In the emergency room, testicular torsion involves a differential diagnosis and urgent management, with consultation and referral to a urologist.

The classic case begins with acute onset of severe scrotal pain, with unilateral scrotal swelling and tenderness. Any patient with scrotal pain and swelling should be checked for testicular torsion; not doing so may constitute negligence.

A patient with suspected torsion of the testis should be promptly referred to a urologist because continued compromise of the testicular blood supply will lead to infarction. Loss of the testicle is most often due to a delay in diagnosis, whether by the patient's or physician's delay. Often, there is a delay in referral to a urologist.[3] Emergency treatment for torsion of the testis usually requires surgical exploration of the scrotum with *detorsion* of the involved testis, unless it is necrotic, and subsequent fixation of *both* testicles in the scrotum. Orchiectomy is performed if the testis is necrotic. Orchiopexy protects the contralateral testis from a similar event. Failure to follow these precepts may constitute negligence.

Clinical Variations and Issues

Up to 40% of patients with testicular torsion report a previous history of similar pain. Torsion can occur during sleep as well as during exertion. There is usually an absence of urinary symptoms. The differential diagnosis of "acute scrotum" is broad and includes acute epididymitis, viral orchitis, hydrocele, torsion of gonadal appendages, strangulated hernia, and tumor with hemorrhage.[4] The most frequent condition that mimics torsion of the testicle is epididymitis. Although microscopic pyuria or bacteriuria may accompany epididymitis, many patients with epididymitis have a normal urinalysis. An occasional patient with torsion may have unrelated bacteriuria or pyuria.[5] Less common differential diagnoses include hematocele, idiopathic scrotal edema, and testicular tumors. Testicular tumors are uncommon, but important because of their malignancy.

In the differential diagnosis of testicular torsion, torsions of a vestigial appendage of the testicle or epididymitis comprise 25% of all acute scrotal swellings. Most cases of torsion of the appendix testis are readily differentiated from torsion of the testis by the well localized tenderness, bluish discoloration and swelling. The examiner can discern that the entire testicle is not involved by the process. However, if the distinction cannot be made preoperatively, exploration is advisable to rule out the more serious condition of testicular torsion. Rarely, the anxiety of a family may not be alleviated by anything less than surgery though the physician may be confident of the diagnosis.

A review of 38 cases of acute scrotal swelling at Cardinal Glennon Children's Hospital between 1985 and 1987 illustrates some diagnostic quandaries. In this series the most difficult task was differentiating between acute epididymitis, which rarely leads to testicular atrophy,[6] and torsion of the testicle, which often does. About 25% of acute scrotal cases were due to torsion of the appendix testicle, a diagnosis that can be made nonoperatively. One-third (12) of the cases included such benign conditions as idiopathic scrotal edema, nonspecific orchitis, hydrocele, and less benign conditions such as testicular trauma, which can result in loss of the testicle, incarcerated inguinal hernia, and testicular tumors. In the series, none of the boys whose testis was normal on initial physical examination experienced subsequent atrophy. One boy with left scrotal pain and swelling was later found to have a mild decrease in testicular mass associated with a varicocele.

Unfortunately, 50% of the testes with typical intravaginal torsion were not salvaged. All of the patients who lost a testis had been initially incorrectly diagnosed as having epididymitis.

Since it is often impossible to distinguish between torsion of the testis and the other diagnoses on the basis of physical examination alone, immediate exploration has been accepted as the best guide for management.[9] Usually, spermatogenesis is impaired irreversibly as early as eight hours from the onset of pain.[7] In one study, although the patients entered the emergency department within five hours of the pain's onset, only 30% of the testes were salvaged.[5] In another series, 72% of all patients were found to have a necrotic testicle at the time of surgery.[8]

Unless the correct diagnosis is established promptly, testicular salvage is not assured.

When and in what circumstances is it justifiable to delay surgical exploration for further evaluation? There are clinical trade-offs among several factors: false positives and false negatives of the available tests, the risks of delay with possible deterioration in viability, and the risks accompanying surgery and general anesthesia. This risk-balancing often poses a problem when a radionuclide scan is used to rule out testicular ischemia and avoid surgery. Levy et al[10] reported the radionuclide scan had a diagnostic accuracy of 89%. Riley et al found radionuclide scanning accurate in 94% of cases of suspected torsion, improving the accuracy of diagnosis 48% over that based on clinical methods alone.[11] Stage et al, in a series of 72 patients, found only one false positive and no false negatives when the results of the testicular scan were compared with the operative diagnoses.[4] However, a recent study failed to support the infallibility of scans. In a small series of 15 patients, the scan was misleading in 2 of 7 cases of surgically proven torsion and in 1 of 5 cases of surgically proven epididymitis.[3] The scans' interpretation may hinge on the clinical circumstances ("What side is the pain on?"), and some cogent arguments have been made against their use.[12] The urologist's clinical judgment, based on the history and physical examination, must govern the management, rather than the laboratory and radiologic tests, especially when the test results are inconsistent with the total clinical picture.

Our belief is that the primary care physician, to protect his patient medically and himself legally, must first have a high index of suspicion and awareness of the emergency, must seek prompt urologic consultation and exploration, and must, if time allows and surgical contraindications force it, utilize scans or other indicated tests to resolve any diagnostic doubts. No scan can substitute for the urologist's knowledge of the vagaries of the disease.

How soon after the patient arrives at the emergency room or the office can and should a diagnosis of torsion of the testis be made? Most authors note the lack of a constant, diagnostic picture. While an adolescent with sudden onset of severe scrotal pain, swelling, and scrotal edema clearly will be suspected of having torsion of the testis, diagnosis outside the classical age group may be more difficult. For example, cases do occur in neonates. In males older than 18, the incidence declines steadily with increasing age but never achieves zero incidence. An older patient with torsion may experience only abdominal pain, nausea, or vomiting. Such symptoms may mask the diagnosis by diverting attention to the upper abdominal organs. The early torsion is diagnosed only by scrotal examination. A torsed testicle may be retracted or rotated; however, such secondary signs are neither reliable nor diagnostic. Clinically, one cuts through the fog by a high index of suspicion, and recognition of an emergency until the possibility of torsion is ruled out.

Detorsion

Spontaneous detorsion most infrequently aborts the ischemic crisis (Cattolica et al[13] in 18%; Donohue and Utley[14] in 24%). However, the underlying anatomic abnormality of bell clapper deformity of the testicle, where the testis dangles free in the hemiscrotum, which is not physically detectable, remains uncorrected and capable of producing a subsequent torsion at any time. Hence, the zeal for manual detorsion encountered in some quarters is not uniformly shared by all competent urologists. Manual detorsion carries the risk of aggravation rather than relief, may cause delay of needed orchiopexy, and may lead to rapid recurrence and possible misdiagnosis.[15] In the final analysis, detorsion is a temporary, non-curative measure, though often successful.

Testicular Salvage Zone

Three basic questions pervade most management quandaries and legal issues: when will testicular function be lost and how much recovery can be achieved, and when should one operate?

The ischemic damage after testicular torsion is progressive, but not linear. Recovery after 24 hours of ischemia is rare, but has been reported. Recovery after 12 hours is partial. Yet, complete infarction has been reported after a mere 4 hours of complete torsion. Recovery becomes less likely and less complete as time passes, particularly in the critical 4 to 12 hours after onset.

We suggest the concept of a "salvage *zone*" to cover the time period between the onset of signs and symptoms to the point of irreversible damage.

The literature suggests a 3-limb, S-shaped curve of ischemic damage over time, with a plateau, a sharp critical rise and another plateau (analogous to the more familiar hemoglobin dissociation curve).[16, 1–19] In the first limb of 4 to 6 hours of ischemia, damage may be assumed to be almost completely reversible. In the third limb, 12 to 24 hours and longer, damage is presumed to be nearly or completely irreversible. Between these two zones, from 4 to 12 hours, the ischemic damage progresses rapidly and becomes less reversible with the passage of each hour. During this period, delay in diagnosis may be costly.

The cutoff point in time most frequently cited in the literature for optimal salvage is six to eight hours from the time of onset of symptoms (usually pain) to the time of surgical or manual detorsion. This oft-reported statement in the literature is traceable to *animal* experiments.[17] Yet, most clinical series report that survival of some testes occurred after eight hours of pain or more. Conversely, operating within 4 hours does not guarantee survival of a torsed testis, which may show subsequent atrophy.[18] In addition, those testes that spontaneously detorse or are manually detorsed tend to do well, despite longer intervals between onset of symptoms and operative treatment.[19, 20] How closely the patient's report or recollection of pain onset marks the onset of ischemia (or its completeness) has never been clarified, though most studies use this as an *objective* point of measurement. Clinical experience tells us that pain threshold, diverting activities, sleep, patient emotions, denial or embarrassment, incompleteness of occlusion, spontaneous detorsion, and variation in the degree of torsion could influence the perception and objectivity of pain onset. Fisch et al,[21] in a small but thorough retrospective study have documented this variability.

Immunologic Damage to Contralateral Testicle

A threat to reproductive capacity by immunological damage to the so-called normal contralateral testicle has been suggested. One recent clinical study reported that diminished testicular function, measured by gonadotropin releasing hormone, reflected lost testicular parenchyma.[21] Until recently, it had been assumed that any damage to the normal contralateral testicle was insignificant, but recent work suggests there is an immunologic reaction that could produce contralateral testicular damage during the acute period of torsion.[23] Some investigators have reported deterioration of semen quality after torsion.[22] In laboratory mice, early excision of a severely damaged, torsed testis has been reported to protect the opposite testicle from immune-mediated damage under such acute[24] conditions. The clinical implications of these data have not been formulated because the immune-mediated damage to the contralateral testicle may be transitory, or species or strain specific.

Three studies have demonstrated degenerative histologic changes on subsequent biopsy of the contralateral untorsed testis. These researchers postulated that antisperm antibodies had formed at the time of the ischemic event. Their work did not rule out, however, that contralateral testicular abnormalities had existed previously.

This line of evidence may develop an additional indication for orchiectomy unless immunosuppressive therapy is proven useful.

The mechanism of ischemia is assumed to be mechanical torsion, but we know of no published studies that delineate the pathophysiology of vascular edema, its reversibility, treatability, coagulation patterns, and infarction patterns. Such studies could uncover opportunities for therapy and better salvage of the partially damaged testicular blood supply.

Medical Testimony

From a physician's point of view, in a negligence suit the law requires that doctors do their job adequately—not brilliantly, but certainly not below the professional community standard. Generally, the law allows the medical profession to define its own practices and standards, then uses expert witness testimony regarding the standard of care to determine whether an individual physician's actions have deviated from the standard, and whether he or she has exercised the necessary knowledge, skill, and judgment and care to be expected of his peer group. Essentially, a malpractice suit is a formal accusation by an aggrieved patient that a substandard job has been done.

Several recurring issues are found in these cases:

1. Delay in or failure of diagnosis
2. Delay in or failure of therapy
3. The extent of damages caused by the clinical errors of omission or commission
4. Who the liable party may be

Testifying doctors, both defendants and expert witnesses, need to be aware of the legal import of their statements. They must understand the limits and subtleties of medical science and medical practice. Our duties are clear; our science is still progressing. The adversary method seizes upon subtle distinctions; it reinterprets or exploits gray areas. The testifying expert must be prepared to demonstrate that medicine is both an art and a science.

In most cases, losing a testicle when the contralateral testis is normal may have no practical effect on the reproductive capacity. But no physician can rely on that information to justify withholding treatment. Compensation for a lost testicle due to professional negligence is higher than for the same loss after an industrial accident, even when age-adjusted. This is true even though the basic cause is an underlying congenital anomaly that allowed the torsion to occur, "an accident waiting to happen."

The physician who must venture into the legal arena should discuss these questions with his lawyer thoroughly to understand better how these principles apply to the case at hand, and to learn the impact and consequences of his words in the debate of deposition and trial. No longer can urologists and surgeons avoid courtroom appearances, lest their testimony default to those of lesser ability and character. Medicine today must be practiced not only ethically and scientifically but also with an eye to the law.

Summary

Testicular torsion is a surgical emergency which requires prompt exploration, detorsion, and bilateral orchiopexy. Once the suspected diagnosis cannot be ruled out, prompt exploration is indicated. The greatest loss of testicular tissue, secondary only to the course of the disease itself, is that due to diagnostic delay for misdiagnosis as epididymitis.

Torsion of the testicle can be confused with acute epididymitis and other entities unless it is treated as a surgical emergency. Managed this way more testicles will be salvaged from torsion and its misdiagnosis.

Certain confusing misapprehensions and limitations to our scientific knowledge exist in the field and must be dispelled by medicolegal experts to prevent exploitation for wrongful verdicts.

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The Authors

SAUL BOYARSKY, M.D., J.D.
GEORGE F. STEINHARDT, M.D.
ROBERT ONDER, M.D.

Drs. Boyarsky and Onder are affiliated with the Washington University School of Medicine, St.Louis, MO. Dr. Steinhardt is affiliated with the St. Louis University School of Medicine, where he is director of urology at Cardinal Glennon Hospital, St. Louis, MO.

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Reprints

Saul Boyarsky, M.D., J.D.
45 Portland Place
St. Louis, MO 63108

Serious Infections Caused by Coagulase-Negative Staphylococci in Intravenous Drug Users

Larry M. Baddour, M.D.
Columbia, Missouri
Susie J. Sargent, M.D.
Memphis, Tennessee

While *Staphylococcus aureus* has been a well-recognized pathogen in patients who use illicit intravenous drugs, coagulase-negative staphylococci are not generally appreciated as causes of infectious complications in intravenous drug users. The authors present data suggesting that coagulase-negative staphylococci are potential pathogens in these high risk patients.

A myriad of infectious complications caused by *Staphylococcus aureus* are well recognized in intravenous drug users.[1-4] These complications include skin and soft tissue infections,[1] infective endocarditis,[2] and musculoskeletal infections.[3] Although infections due to coagulase-negative staphylococci have occurred in the patients using intravenous drugs, such occurrences have been infrequently reported and may go unrecognized. For example, in one recent case report,[5] *Staphylococcus epidermidis* was isolated from intraoperative cultures taken from an intravenous drug user being treated for fulminant endophthalmitis. Although the authors recovered *S. epidermidis* from multiple cultures, they concluded that "the causative organism was not isolated."

We report the case of an intravenous drug user with infection caused by coagulase-negative staphylococci and present our review of 13 cases of serious infectious complications caused by coagulase-negative staphylococci in intravenous drug users.

Case Report

A 33-year-old man with a 13-year history of intravenous drug use had sternal pain that began approximately four months prior to admission. At that time he received a blow to the anterior chest that caused a nonhealing bruise. The sternal area became swollen and discolored. The patient was afebrile and had no other evidence of infection. Erythrocyte sedimentation rate was 94 mm/hr. Sternal radiographs and computed tomographic scan showed bony destruction of the inferior sternum. The patient underwent surgical exploration with partial sternectomy and resection of the left lower costal cartilages. No organisms were seen on the gram stain of surgical specimens that grew coagulase-negative staphylococci; a budding yeast, which failed to grow, was seen on fungal stains. Antibiotic sensitivity testing (Kirby-Bauer technique) showed the staphylococcus to be susceptible to cephalosporins, chloramphenicol, clindamycin, erythromycin, gentamicin, methicillin, and vancomycin, and resistant to penicillin G and ampicillin. Treatment was instituted with intravenous vancomycin HCl, 1 gram every 12 hours, which resulted in peak serum bactericidal levels of 1:4. Amphotericin B, 50mg every day or every other day, was intravenously administered for approximately 3 weeks, but the patient refused further amphotericin B therapy because of headache, fever, and chills associated with its administration. Erythrocyte sedimentation rate fell to 25mm/hr. Despite approximately six weeks of intravenously administered vancomycin HCl, the patient suffered a relapse of infection one month after termination of antimicrobial treatment. Approximately two months later he underwent surgical debridement of the right costal cartilages. Operative cultures grew coagulase-negative staphylococci. In addition, one colony of *Aspergillus* species (non-*Fumigatus*) was isolated from the surgical specimens. He was again treated with vancomycin HCl and amphotericin B (with premedication prior to initiation of each intravenous dose) for four weeks, with clinical improvement. Approximately three months after hospital discharge, the patient was seen as an outpatient. The sternum was healing, and fungal serological tests and tests for antibody to human immunodeficiency virus were negative. Over the ensuing two years, he has been seen five times for medical problems not related to his osteomyelitis without evidence of relapse of his sternal infection.

Comments

Coagulase-negative staphylococci produced aggressive disease in our patient. We speculate that the yeast seen on initial surgical specimen stains and the single colony of *Aspergillus* species isolated from subsequent operative cultures likely represented contaminants. At the same time, it was impossible to confirm whether the musculoskeletal complications were polymicrobial in cause, not uncommon in infections of intravenous drug users. Therefore, amphotericin B therapy was considered appropriate.

Examination of demographic characteristics of our patient and the 13 previously published cases of serious infections in intravenous drug users showed a predominence of young men (Table 1). The average age of patients was 30.9 years. This is consistent with earlier reports of individuals who developed infective endocarditis when intravenous drug use was a predisposing factor.[13–15]

Seven patients developed infective endocarditis; five had tricuspid valve involvement (Table 1). The increased prevalence of right-sided infective endocarditis in intravenous drug users caused by *S. aureus* has been well documented.[14, 16, 17] Thus, both coagulase-positive and coagulase-negative staphylococci are capable of producing right-sided, native-valve infective endocarditis in intravenous drug users.

Recent clinical data[18–21] indicate that coagulase-negative staphylococci are also responsible for native-valve infective endocarditis in non-drug using patients. It is noteworthy that several of the described patients[18, 20, 21] developed infective endocarditis on prolapsing mitral valves. Native-valve infections caused by coagulase-negative staphylococci may produce an indolent clinical course,[18, 21] and coagulase-negative staphylococci isolated from blood cultures may be disregarded in patients without valve prostheses or intravascular catheters; therefore, the diagnosis of infective endocarditis may be difficult to make in most patients, regardless of underlying risk factors for endocardial infection.

Infections caused by coagulase-negative staphylococci were aggressive in several of the patients (Table 1) despite appropriate antimicrobial therapy. Five patients ultimately required surgical procedures, including osseous debridement, cardiac valve replacement, and subtotal exenteration of the orbit with enucleation of the globe (Table 1). Others[18, 19, 21] have also noted serious complications and the need for surgical intervention in non-drug using patients with native-valve endocarditis caused by coagulase-negative staphylococci. Furthermore, three (33.3%) of 9 patients for whom follow-up was available died.

Cultures of street heroin and injection paraphernalia examined by Tuazon and colleagues[22] provide supportive epidemiologic evidence for the infectious potential of coagulase-negative staphylococci among intravenous drug users. In that study, coagulase-negative staphylococci were the second most common isolates from drug paraphernalia that had been used by addicts and the third most common isolate from heroin. Of the 89 culture-positive samples of injection paraphernalia and the 68 culture-positive specimens of heroin, coagulase-negative staphylococci were isolated from 36.0% and 27.9% respectively. The source of the contaminating microorganisms was not determined in this investigation. Considering that *Bacillus* species and coagulase-negative staphylococci were the two most commonly isolated groups of organisms from the samples, the skin[23] of individuals who either had previously used the drug paraphernalia or had handled the drug was most likely responsible for much of the microbial contamination. In addition, the drug users' own skin microflora may be an important source of contamination. While these data indicate that contamination of drugs and drug paraphernalia by *Bacillus* species and coagulase-negative staphylococci may occur, clinical experience indicates that such contamination infrequently results in clinical infection.

Coagulase-negative staphylococci should be considered possible pathogens in patients who use intravenous drugs. This group of organisms can produce serious infections that require combined medical and surgical management.

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Table I.

Clinical features of 14 intravenous drug-using patients with serious infections caused by coagulase-negative staphylococci

Author(s) [reference] Year	No. of cases with *S. epidermidis* Infections	Age/Sex of Patients	Other Predisposing Factors	Findings On Admission	Site of Infection	Complications	Pathologic	Outcome
Wilhelm et al [6], 1947	3	25/F	Exfoliative Dermatitis	—	TV	Multiple septic infarctions	—	Died
		38/M	—	Cough, pleuritic chest pain, pneumonia	TV	Pulmonary infarction, TR	—	Cure
		38/F	—	Fever, chills, chest, abdomen, and thigh (bilaterally) pain	TV	Pulmonary infarction, TR	—	Cure
Cherubin et al [7], 1968	1	—	—	—	—	—	—	—
Joseph et al* [8], 1973	1	49/–	—	—	TV	Septic pulmonary emboli; congestive heart failure; lung abscess; empyema; sepsis; valve replacement	—	Died
Banks et al [9], 1973	2	22/M	Murmur	Fever, AR	AV	—	—	Died
		24/M	—	Pneumonia, TR	TV	—	—	Cure
Neufeld et al [10], 1976	3	—	—	—	—	—	—	—
Tuazon and Miller [11], 1983	1	24/M	Previous IE	Fever, tonsillitis, Grade 3/6 systolic murmur	—	Pleuritic chest pain and hemoptysis	—	Cure
Conrad and West [12], 1984	1	27/M	—	Systolic ejection murmur, early diastolic murmur, S4, mid-diastolic rumble	AV	AR; AVR; Permanent ventricular pacemaker	Bicuspid AV with vegetations; destruction of right coronary-noncoronary cusp; myocardial abscess	Cure
Kreeger et al [5], 1987	1	29/M	—	Conjunctivitis; opaque cornea; no light perception vision	Right Eye	Endophthalmitis; orbital cellulitis and myositis; subtotal exenteration of the orbit with enucleation of the globe	Endophthalmitis; orbital cellulitis and myositis	Cure
This Case	1	33/M	Blunt trauma	Soft tissue swelling in area of inferior sternum	Inferior Sternum	—	Osteomyelitis	Relapse

Note abbreviations: **AR** = aortic regurgitation; **AV** = aortic valve, **AVR** = aortic valve replacement, **TR** = tricuspid regurgitation, **TV** = tricuspid valve.

*This patient also had *S. aureus* isolated from vegetation cultures.

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The Authors

LARRY M. BADDOUR, M.D., F.A.C.P.
SUSIE J. SARGENT, M.D.

Dr. Baddour is with the Department of Medicine, Division of Infectious Diseases at the University of Missouri, Columbia, Missouri. Dr. Sargent is with the Department of Medicine at the University of Tennessee, Memphis, Tennessee.

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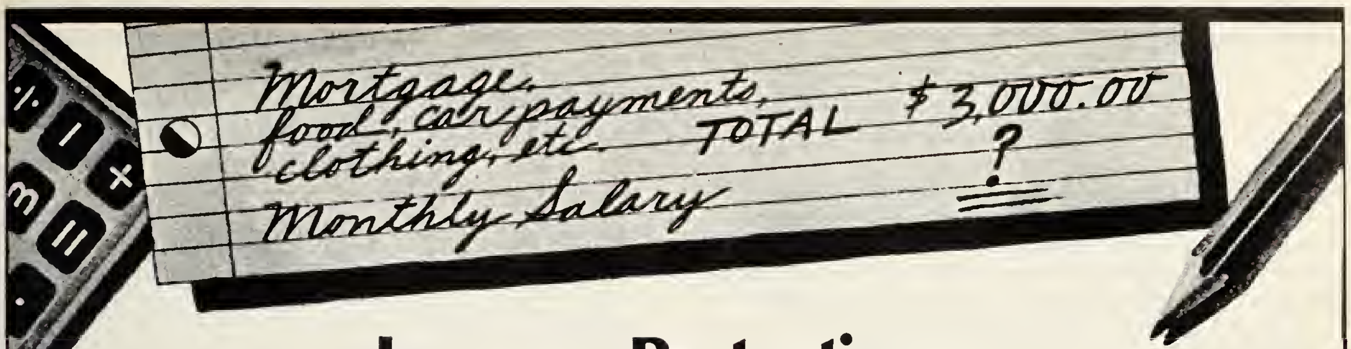
Reprints

Larry M. Baddour, M.D.
University of Missouri-Columbia
Department of Medicine
Division of Infectious Diseases
Room M425
Columbia, MO 65212



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June

1 **Perinatal Sonography: Clinical Applications For 1990** — Location: St. Mary's Health Center, St. Louis, MO. Contact: Sandy Cobb, Continuing Medical Education, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/768-8730.

1 **Dimensions in Pain Management** — Location: Research Medical Center, Kansas City, MO. Contact: The Ed Bixby Institute for Postgraduate Medical Education, Research Medical Center, 2316 East Meyer Blvd., Kansas City, MO 64132. 816/276-4306.

1 - 2 **Ultrasound Symposium** — Location: St. John's Mercy Medical Center, von Gontard Conference Center, St. Louis, MO. Contact: Judith L. O'-Guin, St. John's Mercy Medical Center, 615 South New Ballas Road, St. Louis, MO 63141-8221. 314/569-6290.

1 - 2 **3rd Annual Contact Lens Course** — Location: Washington University Medical Center, St. Louis, MO. Contact: Cathy Caruso, Continuing Medical Education, Washington University School of Medicine, Box 8063, 660 S. Euclid, St. Louis, MO 63110. 314/362-6893.

1 - 2 **Glennon Update in Pediatric Gastroenterology and Pediatric Endocrinology** — Location: Hyatt Regency Hotel, St. Louis, MO. Contact: Mary Hummert, Educational Coordinator, Room 202, Cardinal Glennon Children's Hospital, 1465 S. Grand Blvd., St. Louis, MO 63104. 314/577-5638.

1 - 3 **The Big Four: Obesity, Diabetes Mellitus, Hypertension, Hyperlipidemia** — Location: Holiday Inn Executive Center, Columbia, MO. Contact: Barry Kling, MU School of Medicine, Office of Continuing Education, MA215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

5 - 7 **Introduction to Doppler Echocardiography** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: Kathleen Habermehl, Continuing Medical Education, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8897.

6 - 9 **Facial Rejuvenation** — Location: Ritz-Carlton St. Louis Hotel, St. Louis, MO. Contact: Cathy Caruso, Office of Continuing Medical Education, Washington University School of Medicine, 660 S. Euclid, Box 8063, St. Louis, MO 63110. 1-800-325-9862 or 314/362-6893.

6 - 10 **7th Annual Meeting of the Southern Orthopaedic Association** — Location: Hyatt Regency Hotel, Maui, Hawaii. Contact: Jeanette Stone, Southern Orthopaedic Association, 35 Lakeshore Drive, P.O. Box 190088, Birmingham, AL 35219-0088. 205/945-1848.

7 - 9 **Spine - Microsurgery and Stabilization** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: Anita Herbst Continuing Medical Education, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8167.

7 - 9 **Frontiers in Endosurgery: Flexible Endoscopy, Laser Surgery, and Endourological Techniques** — Location: Washington University Medical Center, St. Louis, MO. Contact: Cathy Caruso, Continuing Medical Education, Washington University School of Medicine, Box 8063, 660 S. Euclid, St. Louis, MO 63110. 314/362-6893.

8 - 9 **Primary Pediatrics** — Location: Holiday Inn Executive Center, Columbia, MO. Contact: Barry Kling, MU School of Medicine, Office of Continuing Education, MA215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

11 - 16 **Microsurgery of the Brain** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: Anita Herbst, Continuing Medical Education, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8167.

13 - 17 **Issues In Care: Pain** — Location: South Padre Hilton Resort, South Padre Island, TX. Contact: Charlene E. Lee, Office of Continuing Medical Education, Scott and White, 2401 S. 31st Street, Temple, TX 76508. 817/774-4073.

20 **Ovarian Cancer** — Location: Jewish Hospital, St. Louis, MO. Contact: Alan P. Lyss, M.D., Jewish Hospital, 216 S. Kingshighway, P.O. Box 14109, St. Louis, MO 63178. 314/454-7000.

21 - 22 **Pediatric Advanced Life Support (PALS) Provider Course** — Location: Texas A&M University, Temple, TX. Contact: Charlene E. Lee, Office of Continuing Medical Education, Scott and White, 2401 S. 31st Street, Temple, TX 76508. 817/774-3197.

22 - 24 **Annual Professional Meeting of the Missouri Chapter of American College of Surgeons** — Location: Lodge of the Four Seasons, Lake Ozark, MO. Contact: Linda Wheelen, 1926 S. Broadway, Springfield, MO 65807. 417/869-5222.

22 - 24 **1990 Robert E. Owen Graduation Weekend: "Office Medicine and Management in the 1990s"** — Location: Doubletree Hotel and Conference Center, St. Louis, MO. Contact: Marilyn Porter, M.Ed., Metropolitan Medical Center Education Institute, 530 Des Peres Rd., St. Louis, MO 63131. 1-800-888-METRO or 314/966-9285.

28 - 30 **Highlights in Women's Health Care** — Location: Sante Fe, NM. Contact: Charlene E. Lee, Office of Continuing Medical Education, Scott and White, 2401 South 31st Street, Temple, TX 76508. 817/774-4073.

July

10 - 12 **Transesophageal Echocardiography Course** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: Kathleen Habermehl, Continuing Medical Education, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8897.

12 - 13 **Advanced Trauma Life Support (ATLS) Provider Course** — Location: Texas A&M University, Temple, TX. Contact: Charlene E. Lee, Office of Continuing Medical Education, Scott and White, 2401 South 31st Street, Temple, TX 76508. 817/774-3197.

16 - 17 **Advanced Cardiac Life Support (ACLS) Provider Course** — Location: Texas A&M University, Temple, TX. Contact: Charlene E. Lee, Office of Continuing Medical Education, Scott and White, 2401 South 31st Street, Temple, TX 76508. 817/774-3197.

19 - 22 **KU Summer Medical Symposium — Medicine For the Practicing Physician** — Location: Broadmoor Hotel and Convention Center, Colorado Springs, CO. Contact: Andrea Shaw, University of Kansas Medical Center, Office of Continuing Education, Rainbow and Olathe Blvds., Kansas City, KS 66103. 913/588-4480.

28 - Aug 3 **Advanced Otolaryngic Allergy** — Location: Tamarron Golf and Tennis Resort, Durango, CO. Contact: James W. Willoughby, M.D., Director, Missouri Postgraduate Course in Allergy, Inc., Suite A, 24-26 South Main Street, Liberty, MO 64068. 816/781-0902.

August

3 - 4 **Management of Post-Surgical and Post-Traumatic Complications in Orthopaedics** — Location: Ritz-Carlton Hotel, St. Louis, MO. Contact: Cathy Caruso, Office of Continuing Medical Education, Washington University School of Medicine, 660 S. Euclid, Box 8063, St. Louis, MO 63110. 314/325-9862.

5 - 10 **Ninth Annual Internal Medicine Review For the Primary Care Physician** — Location: South Padre Hilton Resort, South Padre Island, TX. Contact: Charlene E. Lee, Office of Continuing Medical Education, Scott and White, 2401 South 31st Street, Temple, TX 76508. 817/774-2350.

September

11 - 13 **Introduction To Doppler Echocardiography** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: Kathleen Habermehl, Continuing Medical Education, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8897.

14 - 15 **Dermatology** — Location: Holiday Inn Executive Center, Columbia, MO. Contact: Barry Kling, University of Missouri-Columbia School of Medicine, Office of Continuing Education, MA215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

17 - 19 **Memory Function in Aging and Aging Related Changes Symposium** — Location: Clarion Hotel, St. Louis, MO. Contact: Ms. Carolyn Leach, Conference Secretary, VA Medical Center, GRECC(111G-JB), St. Louis, MO 63125. 314/894-6510.

October

5 - 6 **33rd Annual Alumni Weekend** — Location: CME Auditorium, MA217, University of Missouri School of Medicine, Columbia, MO. Contact: Barry Kling, Office of Continuing Education, MA 215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

26 **Caring for People With HIV Infection and AIDS** — Location: Sheraton St. Louis Hotel at Convention Plaza, St. Louis, MO. Contact: Susan Wightman, R.N., Program Coordinator, Washington University School of Medicine, 4940 Audubon Ave., St. Louis, MO 63110. 314/362-2418.

19 **Rheumatology 1990** — Location: Lodge of the Four Seasons, Lake Ozark, MO. Contact: Barry Kling, University of Missouri-Columbia School of Medicine, Office of Continuing Education, MA215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

November

1 - 3 **Clinical Allergy For the Practicing Physician** — Location: Ritz-Carlton Hotel, St. Louis, MO. Contact: Cathy Caruso, Office of Continuing Medical Education, Washington University School of Medicine, 660 S. Euclid, Box 8063, St. Louis, MO 63110. 314/362-6893.

9 - 10 **OB-GYN Update** — Location: Holiday Inn Executive Center, Columbia, MO. Contact: Barry Kling, University of Missouri-Columbia School of Medicine, Office of Continuing Education, MA215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

25 - 28 **Clinical Allergy — Inhalant and Food Sensitivity "Review and How-To"** — Location: Ritz-Carlton Hotel, Kansas City, MO. Contact James W. Willoughby, M.D., Director, Missouri Postgraduate Course in Allergy, Inc., Suite A, 24-26 South Main Street, Liberty, MO 64068. 816/781-0902.

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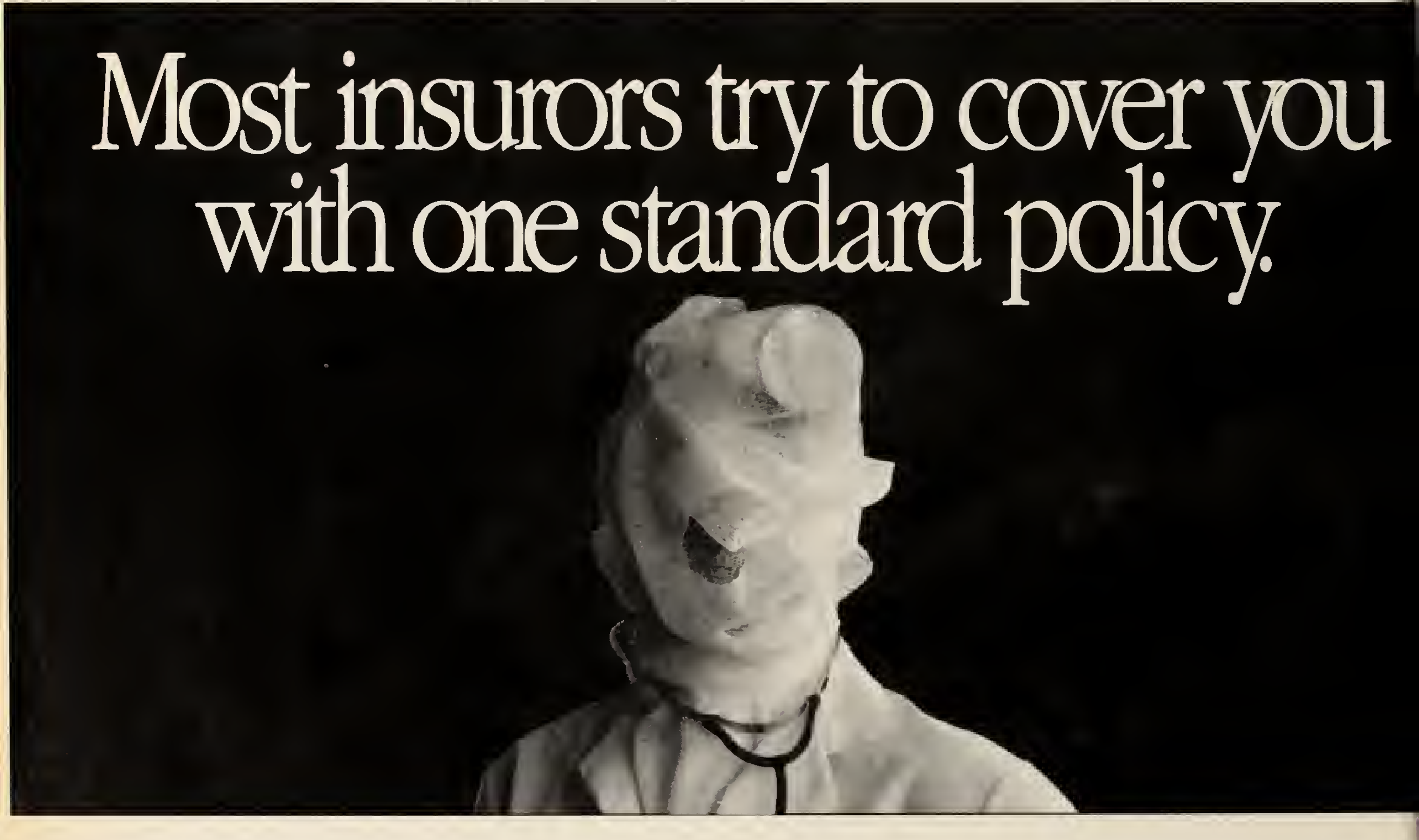
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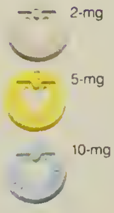
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Medical School News

Washington University

■ **Stuart A. Kornfeld, M.D.**, and **Rosalind Kornfeld, Ph.D.**, professors of medicine and biochemistry at Washington University School of Medicine in St. Louis, have received MERIT status from the National Institutes of Health (NIH) for their latest grant.

The five-year $1,715,912 grant from the National Cancer Institute, part of the NIH, will enable the Kornfelds to continue research on the biochemistry of glycoproteins. MERIT (Method to Extend Research in Time) status guarantees the Kornfelds uninterrupted financial support without the time-consuming paperwork and other delays traditionally associated with grant renewal applications. Researchers are chosen for MERIT status in recognition of their consistent commitment to excellence based on previous research. Once received, a five-year grant with MERIT status may be extended an additional three to five years.

Stuart Kornfeld has been on the School of Medicine faculty since 1966. Rosalind Kornfeld has been on the School of Medicine faculty since 1969.

■ **Philip Needleman, Ph.D.**, vice president of research and development of Monsanto Corporate Research in St. Louis, delivered the *13th Annual Oliver H. Lowry Lecture* in Pharmacology May 10 in Carl V. Moore Auditorium at Washington University School of Medicine in St. Louis.

Needleman, who served for 13 years as head of the Department of Pharmacology at the School of Medicine, will discuss "Atriopeptin: Discoveries and Implications."

Needleman is recognized for his research on the mechanisms of blood pressure regulation. He has also had a career-long interest in how peptides directly influence blood vessel dilation and kidney function to regulate blood pressure and blood volume.

The Lowry Lecture is sponsored by the Department of Pharmacology to honor **Oliver W. Lowry, M.D., Ph.D.**, distinguished professor emeritus and lecturer. Lowry served as head of the department from 1947-76 and as dean of the School of Medicine from 1955-58. Since 1989, he has served as interim head of the pharmacology department.

■ **James A. Purdy, Ph.D.**, professor and chief of radiation physics at Washington University's Mallinckrodt Institute of Radiology, has been appointed chairman of the American College of Medical Physics (ACMP). Purdy served as vice-chairman in 1989.

Founded in 1982 by the board of directors of the American Association of Physicists in Medicine (AAPM), the ACMP has 250 members who are the most senior medical physicists in the profession. The goal of the organization is to enhance the quality of practice in medical physics, encourage professional activities that benefit the medical physics community, and to promote the continuing competence of medical physics practitioners.

Purdy joined the faculty of Mallinckrodt Institute in 1973 and was appointed chief of the Radiation Physics Section in the Division of Radiation Oncology in 1976.

■ The National Institutes of Health (NIH) recently awarded Washington University's Mallinckrodt Institute of Radiology a $3 million program grant to study how particular cancer cells will respond to a given course of therapy.

Principal investigator **Joseph L. Roti Roti, Ph.D.**, professor of cancer biology in radiology and chief of the cancer biology section at Mallinckrodt Institute, will lead his research team in the understanding of how certain cancer cells are able to survive radiation, chemotherapy and/or hyperthermia. To accomplish this task, it will be necessary to define the biological processes of cell death after cancer treatment.

This five-year study, called "Nuclear Determinants of Therapeutic Response," will hopefully unlock the mechanism of radiation-induced cell killing at the molecular level, which has puzzled researchers for years.

■ A world-renowned expert on asbestos and asbestos disease delivered the ninth *Richard A. and Betty H. Sutter Visiting Professor Lecture* in Occupational and Industrial Medicine, May 3, in Clopton Amphitheater at Washington University School of Medicine in St. Louis.

Irving J. Selikoff, M.D., professor emeritus at Mount Sinai School of Medicine titled his lecture, "Preventing Asbestos Disease." Selikoff, who is also professor emeritus of community medicine at Mount Sinai, is renowned for his expertise in environmental research and public health concerns. He has been on the faculty at Mount Sinai since 1968 and before that directed the Environmental Sciences Laboratory there.

St. Louis physician **Richard A. Sutter, M.D.**, and his wife **Betty Sutter**, established the visiting professorship in 1985 to expand the understanding and practice of occupational medicine.

Sutter is founder of the Sutter Clinic, Inc., which since 1946 has provided occupational medical service to more than 1,500 companies in the St. Louis area. He was director of the clinic until 1984, when it was bought by Barnes Hospital. Sutter continues to serve as a consultant at the clinic.

■ In striving to meet the needs of Alzheimer's patients and their families, the Program in Occupational Therapy at Washington University School of Medicine offers an exercise program for people with mild dementia. The class, called the Memory and Aging Exercise Program, is currently accepting new participants.

According to occupational therapist **Linda Hunt**, who developed the classes, those with mild senile dementia are unable to appropriately interact in a normal exercise group, yet are unsuitable for adult day-care centers which serve a more impaired population.

Participants take part in therapeutic exercises and activities designed to be fun while promoting endurance, flexibility and coordination as well as reducing agitation and the day sleep that often occurs as many of these patients become less active. The group also encourages participants to socialize with each other and work toward goals.

Caregivers may stay and exercise with the impaired persons or take the time to run errands or have time to themselves. At the end of each class, they are informed about what the class did and how the participant responded.

Classes meet Tuesdays and Thursdays from 9 a.m. to noon at Delmar Gardens of Creve Coeur, 850 Country Manor Lane. Cost is $10 per class. For more information, call Hunt at 314/362-2291.

University of Missouri-Columbia

■ MU's University Hospital and Clinics on April 15 became the first Missouri medical center outside of St. Louis to perform a pancreas transplant. Surgeons **Basil Georgi, M.D., Gilbert Ross, M.D.**, and **Michael Metzler, M.D.**, performed the nine-hour procedure, done in conjunction with a kidney transplant, on 28-year-old David Koller of Sunrise Beach, MO. MU, which has offered kidney transplantation since 1972, initiated a heart transplantation program last year.

■ The MU Medical Alumni Organization honored seven physicians and a Missouri legislator April 6 during a luncheon held in conjunction with the annual meeting of the Missouri State Medical Association at the Lake of the Ozarks.

The organization's highest honor, the Citation of Merit, was awarded to 1964 graduate **Clarence E. Grim, M.D.**, professor of medicine and director of hypertension research at the Charles R. Drew University of Medicine and Science and the University of California at Los Angeles. Receiving Young Physicians Awards were 1972 graduates **Kenneth Lee Baughman, M.D.**, associate professor of medicine at Johns Hopkins University, and **Dennis Schaberg, M.D.**, professor of internal medicine at the University of Michigan. **Melvin R. "Pete" Hayden, M.D.**, a 1970 graduate who practices family medicine in Camdenton, MO, was given the Service Award. Named as "honorary alumni" were **Giulio J. Barbero, M.D.**, MU professor of child health; **Eva L. Frazer, M.D.**, of St. Louis, president UM System Board of Curators; and **Marvin A. Singleton, M.D.**, of Joplin, outgoing MSMA president. State **Sen. Roger Wilson**, D-Columbia, received a special recognition award.

■ **Susan Dunkin** of Columbia has been named director of development for the MU School of Medicine. Dunkin previously served as a conference planner in the school's Office of Continuing Medical Education, where she was responsible for organizing and directing state and regional professional education conferences for physicians. Before that, she was the physician services representative for University Physicians at MU, serving as liaison to referring physicians and health-care centers throughout Missouri.

■ **F. F. Ahmad**, a fellow in the department of pharmacology, will present a paper this month in Toronto at the fifth meeting of the International Society for Biomedical Research on Alcoholism.

■ **Philip Anderson, M.D.**, director of dermatology, was given a citation by the Women's Dermatologic Association for his contributions to that organization. In 1974, Anderson assisted in the founding of the WDA, a national organization for women dermatologists.

■ **Bernard D. Beitman, M.D.**, professor of psychiatry, gave two presentations at a recent meeting of the Phobia Society of American in Bethesda, MD. He discussed "Chest Pain and Panic Disorder" and "Panic Disorder in Patients with Angiographically Normal Coronary Arteries."

■ **Susan P. Buckelew, Ph.D.**, assistant professor of physical medicine and rehabilitation, is primary author of two papers recently accepted for publication in *Paraplegia* and *Pain*. One focuses on spinal cord injury and the other on persistent pain.

■ **Jack M. Colwill, M.D.**, professor and chairman of the department of family and community medicine, gave addresses at three recent conferences. He presented the keynote address on "Current Trends in Specialty Interest" at the Society of Teachers of Family Medicine Predoctoral Conference in San Diego, CA. He also spoke at the national meeting of the Association of Departments of Family Medicine in Palm Springs, CA, and at the second Health Resources Services Administration Primary Care Conference in Columbia, MD.

■ **Syed Arshad Husain, M.D.**, professor and chief of child and adolescent psychiatry, was an invited speaker in April at the eighth BASH (Bulimia Anorexia Self-Help) international conference in St. Louis. He gave talks on mood disorder and anxiety disorder in children and participated in a panel discussion.

■ **Ramesh Khanna, M.D.**, associate professor of nephrology, gave two lectures recently at an international course on nephrology in Caracas, Venezuela, sponsored by the International, Latin American and Venezuelan societies of nephrology.

■ **Joseph W. Lamberti, M.D.**, associate professor of psychiatry, presented a talk on family grief at a recent meeting of the Association of Death Educators and Counselors in New Orleans.

■ **Larry W. Lawhorne, M.D.**, assistant professor of family and community medicine, was invited to present his research findings titled "Vitamin B-12 Injections for Patients Without Documented Deficiency" at the 1990 Foundations in Primary Care Research meeting in London, Ontario.

■ **Karl D. Nolph, M.D.**, recently spoke at seminars on peritoneal dialysis in Chicago, San Diego and Deerfield, IL. He was a co-investigator of a multicenter study recently published in *Peritoneal Dialysis International* comparing patient and technique survival in continuous ambulatory peritoneal dialysis (CAPD) and hemodialysis.

■ **Randall D. Smith, M.D.**, clinical assistant professor of physical medicine and rehabilitation, served as a guest oral examiner May 12 and 13 for the American Board of Physical Medicine and Rehabilitation in Rochester, MN.

■ Nine members of the department of family and community medicine participated in presentations at the annual meeting of the Society of Teachers in Family Medicine May 5-9 in Seattle, WA. They are **Robert L. Blake, Jr., M.D.; Janis C. Dally, R.N., M.S.P.H.; Joseph Stanford, M.D.; Bernard Ewigman, M.D.; Coleen Kivlahan, M.D., M.S.P.H.; Steven Zweig, M.D., M.S.P.H.;** and **Michael C. Hosokawa, Ed.D.**

■ Researchers in the department of pharmacology presented seven papers April 2-6 at the annual meeting of the Federation of American Societies for Experimental Biology in Washington, D.C. Primary authors were **F. F. Ahmad, Ph.D., Keith Byington, Ph.D., Animesh Dhar, Ph.D., Stephen Halenda, Ph.D., Dong Hwan Sohn, Ph.D., John T. Turner, Ph.D.**, and **Hung Wu, Ph.D. W. D. Wosilait, Ph.D.**, authored or co-authored two papers presented April 2-4 at the third symposium on Frontiers of Pharmacokinetics and Pharmacodynamics in Baltimore.

■ MU's division of cardiology now offers transesophageal echocardiography, providing state-of-the-art techniques to evaluate dissection of the aorta, malfunctioning prosthetic valves, complications of endocarditis and left atrial thrombi. For more information, contact **Bruce Graham, M.D.**, at 314/882-2284.

St. Louis University

■ **Raul O. Parra, M.D.,** associate professor of surgery, St. Louis University School of Medicine, has been named director of the division of urology. The announcement was made by **Vallee L. Willman, M.D.,** professor and chairman of the department of surgery.

Dr. Parra joined the division of urology at St. Louis University School of Medicine in 1986 as director of urologic oncology. Prior to that, Dr. Parra was instructor in urology at the State University of New York School of Medicine in Buffalo, N.Y.

■ **Mary F. Christiano Ruh, Ph.D.,** professor and interim chairman of physiology, St. Louis University School of Medicine, has received the 1990 Distinguished Alumna In Medical Technology Award from Marquette University in Milwaukee, WI. The honor, which is only awarded periodically to deserving alumna, was bestowed during Marquette's annual Spring Mass and Alumni Award Brunch in April.

Dr. Ruh, who has been on the faculty of St. Louis University School of Medicine since 1971, received three degrees from Marquette, including an undergraduate degree in medical technology and both her master's and doctorate degrees in physiology.

Following the awarding of her doctorate degree in 1969, Dr. Ruh was an instructor in physiology and biophysics at the University of Illinois in Urbana. She joined St. Louis University School of Medicine two years later as assistant professor of physiology. She has served as interim chairman of the physiology department for the past two years.

■ **Claudette Klein, Ph.D.,** professor of biochemistry and molecular biology, St. Louis University School of Medicine, has received a two-year, $200,000 grant from the American Cancer Society. The award is being used to study the "Role of a Guanine Nucleotide Binding Protein in *D. discoideum.*" Guanine nucleotide binding proteins have been implicated in the regulation of a number of cellular processes including hormone signal transduction.

Dr. Klein's research will allow for a better understanding of how a guanine nucleotide binding protein participates in the regulation of cellular functions. This understanding could lead to greater insights into the control steps that go awry in disease states.

Dr. Klein joined the faculty of St. Louis University School of Medicine in 1977.

■ **Paul Wollenzien, Ph.D.,** assistant professor of biochemistry and molecular biology, St. Louis University School of Medicine, has been awarded a two-year, $140,000 grant from the National Science Foundation. He will use the award to study the mechanism of protein synthesis on bacterial ribosomes.

Dr. Wollenzien is researching the process by which genetic information carried by messenger RNA is used to make proteins by the ribosomes. Ribosomes are, basically protein building machines. Dr. Wollenzien is studying the components of the ribosomes to understand how they are assembled and how they function. The knowledge gained might aid in the development of medications which could specifically inhibit the development of pathological organisms or diseases.

Dr. Wollenzien joined the faculty of St. Louis University School of Medicine in 1984.

■ **David W. Wagner, M.S.,** chairman of the department of physician education and director of the physician assistant education program, St. Louis University School of Allied Health Professions, has received a $62,744 grant from the U.S. Department of Health and Human Services.

The grant will support programs for Physician Assistant Education in the areas of geriatrics, home health care, minority recruitment and deployment into manpower shortage areas.

Wagner has been a member of the St. Louis University School of Allied Health Professions faculty since 1973.

■ **Subir K. Bose, Ph.D.,** professor and interim chairman of the department of microbiology, St. Louis University School of Medicine, has been awarded a one-year, $5,000 renewal grant from the Division of Scientific Affairs North Atlantic Treaty Organization (NATO) to continue his cooperative research on chlamydia with **Dr. Evangelia Vretou** of Institute Pasteur, Athens, Greece.

The research focuses on isolating a chlamydial receptor, which if identified, could aid in producing an antibody for the sexually transmitted disease. The antibody may aid in developing a vaccine to treat the disease.

Chlamydia affects 40-50 million people throughout the world each year. It can cause blindness and sterility, especially in women, if left untreated. Dr. Bose said that the development of a vaccine could help curb the widespread prevalence of this disease, especially in third world countries where treatment is cost prohibitive.

Dr. Bose joined St. Louis University School of Medicine in 1965. He has been researching chlamydia since 1978, and will speak on the subject this month at the Seventh International Symposium on Human Chlamydial Diseases in Vancouver, Canada.

■ Patients who have undergone unsuccessful coronary balloon angioplasty procedures may have an alternative to emergency bypass surgery if a device being tested at St. Louis University Medical Center receives approval by the Food and Drug Administration (FDA).

Ubeydullah Deligonul, M.D., coordinator of interventional cardiology programs in the department of internal medicine's division of cardiology, says the preliminary findings are promising. He hopes to have the final results within six months to a year.

The device is called a stent, a stainless steel wire coil that supports the inner wall of the coronary artery. St. Louis University Medical Center is one of 15 centers in the country and the only one in Missouri that has received approval to test this device.

Pending data submitted by the institutions involved in the clinical trials, a decision by the FDA could be expected in June 1991.

■ Men who are exposed to nutritional advice, smoking cessation classes and better hypertension treatment live longer than those not receiving special medical attention, confirms a study published in the April 4 issue of the *Journal of the American Medical Association (JAMA).*

Jerome D. Cohen, M.D., professor of internal medicine in the division of cardiology, St. Louis University School of Medicine, and local principal investigator, worked in collaboration with 22 other institutions on the 10-year study.

The study, "Multiple Risk Factor Intervention Trial (MRFIT)" involved more than 12,800 men 35-57 years old. The trial tested and compared the effect of a multi-faceted intervention program to reduce coronary heart disease mortality among men who smoked and had above normal blood pressure and cholesterol levels to those not on an interventional program.

The initial task was to try to prevent a first heart attack, and they were able to do that according to Dr. Cohen.

An earlier MRFIT study, taken after six to eight years of intervention, showed no significant mortality rate differences between the two groups of men. The latest study indicates that 3.8 years after the end of intervention, mortality differences are rising.

Following 10.5 years of follow-up, individuals who were in the specialized group showed improved mortality rates from coronary heart disease, cardiovascular disease and all other causes by 10.6 percent, 8.3 percent and 7.7 percent, respectively.

■ The Lions Eye Bank has announced the opening of a new eye bank housed at Bethesda Eye Institute at St. Louis University Medical Center.

The eye bank, officially deemed the St. Louis Lions Tissue Service and Eye Bank at Bethesda Eye Institute, will serve as a receiving, processing and distribution laboratory for donor eye tissue. All donated eye tissue is utilized by the eye bank, benefitting patients in the St. Louis area.

Last year 472 corneas were processed for transplantation in the St. Louis area. At any given time, 125-150 patients wait for suitable corneas for transplantation. Cornea transplant operations now have a success rate of 95 percent. Eye tissue unsuitable for transplant is used for medical research.

Bethesda Eye Institute is under the direction of **David J. Schanzlin, M.D.**, professor and chairman of the department of ophthalmology, St. Louis University School of Medicine. Dr. Schanzlin and **John J. Purcell, Jr., M.D.**, associate clinical professor of ophthalmology, St. Louis University School of Medicine, serve as medical co-directors of the eye bank. The St. Louis Lions Tissue Service and Eye Bank at Bethesda Eye Institute is one of two eye banks in St. Louis.

■ "Four Models of Physician-Patient Relationship" was the topic of the *Fifth Annual Drummond Lecture in Medical Ethics*, sponsored by the Center for Health Care Ethics at St. Louis University Medical Center, on March 30. The lecture was delivered by **Ezekial J. Emanuel, M.D., Ph.D.**, of Harvard University's Program for Ethics in the Professions.

The Drummond Lecture in Medical Ethics honors the **Rev. Edward J. Drummond, S.J.**, who was the first vice president for the medical center from 1962 until 1973. The lectures were instituted by **George E. Thoma, M.D.**, who served as vice president for the medical center from 1973 to 1985. Endowments for the lectureship have been contributed by Father Drummond's friends and associates.

Father Drummond became executive vice president of St. Louis University in 1973 and served as the interim president in 1978-79. He retired in 1979, but continues to serve as special assistant to the vice president for the medical center.

■ **Joseph G. Reves, M.D.**, professor of anesthesiology and director of the Heart Center at Duke University, was the guest speaker for the *Third Annual John F. Schweiss Lecture in Anesthesiology* on April 28. Dr. Reves lecture was titled "The Brain and Cardiopulmonary Bypass."

Dr. Reves has served on national research committees for the American Heart Association. In addition to four books, Dr. Reves has authored more than 300 publications, book chapters and abstracts.

The John F. Schweiss, M.D. Lecture in Anesthesiology was established in 1988 in honor of Dr. Schweiss, professor and chairman of the department of anesthesiology. He received his medical degree from St. Louis University School of Medicine in 1948 and was named assistant professor of surgery in 1952. Dr. Schweiss was named chief of anesthesiology in 1960 and became professor and director of anesthesiology in 1963. The lecture is supported by Burroughs-Wellcome, friends and colleagues.

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New Members

■ **Robert F. Beckman, M.D.,** 6411 Chippewa, St. Louis 63109, has become a member of the Missouri State Medical Association. Dr. Beckman received his preliminary education at Auburn University and obtained his medical degree at the University of Alabama School of Medicine in 1983. He completed his residency at St. Louis University, St. Louis, MO. Dr. Beckman specializes in general surgery.

■ **Gary W. Blanchard, M.D.,** 6150 Oakland Avenue, St. Louis 63139, has become a member of the St. Louis Metropolitan Medical Society. Dr. Blanchard obtained his medical degree at the Louisiana State University School of Medicine in 1980. He completed his residency at Deaconess Hospital, St. Louis, MO. Dr. Blanchard specializes in anesthesiology/internal medicine.

■ **Kathryn Botney, M.D.,** 224 S. Woods Mill Road, Suite 680-S, Chesterfield 63017, has become a member of the Missouri State Medical Association. Dr. Botney received her preliminary education at Washington University and obtained her medical degree at the Washington University School of Medicine in 1984. She completed her residency at Washington University Affiliated Hospitals, St. Louis, MO. Dr. Botney specializes in obstetrics/gynecology.

■ **Bradford E. Clayton, M.D.,** 5701 Delmar, St. Louis 63112, has become a member of the Missouri State Medical Association. Dr. Clayton received his preliminary education at Louisiana State University and obtained his medical degree at the LSU School of Medicine in 1983. He completed his residency at Vanderbilt Medical Center, Nashville, TN. Dr. Clayton specializes in obstetrics/gynecology.

■ **Patrick A. Cleary, M.D.,** Columbia Surgical Associates, Inc., 3401 Berrywood Dr., Suite 104, Columbia 65201, has become a member of the Boone County Medical Society. Dr. Cleary received his preliminary education at Indiana University and Ball State University and obtained his medical degree at the Ohio State University College of Medicine in 1984. He completed his residency at Barnes Hospital, St. Louis, MO. Dr. Cleary specializes in general surgery.

■ **John M. Cox, D.O.,** 702 E. 34th Street, Suite 204, Joplin 64804, has become a member of the Jasper County Medical Society. Dr. Cox received his preliminary education at Westminster College and obtained his osteopathic degree at the Kirksville College of Osteopathic Medicine in 1978. He completed his residency at Riverside Hospital, Trenton, MI. Dr. Cox specializes in cardiology.

■ **Robert V. Dell, M.D.,** P.O. Box 3932, Poplar Bluff 63901, has become a member of the Butler-Wayne-Ripley-Carter Counties Medical Society. Dr. Dell received his preliminary education at Texas Christian University and obtained his medical degree at the Kansas University School of Medicine in 1976. He completed his residency at Wifford Hall USAF Medical Center, Lackland AFB, TX. Dr. Dell specializes in diagnostic radiology.

■ **Jeanne A. Drisko, M.D.,** Menorah Medical Center, 4949 Rockhill Road, Kansas City 64110, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Drisko received her preliminary education at Washington University and obtained her medical degree at the Kansas University School of Medicine in 1979. She completed her residency at the Kansas University Medical Center, Kansas City, KS. Dr. Drisko specializes in radiology.

■ **John P. Galgani, Jr., M.D.,** 1125 Graham Road, Florissant 63031, has become a member of the Missouri State Medical Association. Dr. Galgani received his preliminary education at Massachusetts College of Pharmacy and obtained his medical degree at the St. Louis University School of Medicine in 1982. He completed his residency at Children's Hospital, St. Louis, MO. Dr. Galgani specializes in pediatrics/pediatric endocrinology.

■ **Karladine E. Graves, D.O.,** Briarcliff Medical Associates, P.C., 5400 N. Oak Trafficway, Suite 200, Kansas City 64118, has become a member of the Clay-Platte County Medical Society. Dr. Graves received her preliminary education at Northeast Missouri State University and obtained her osteopathic degree at the Kirksville College of Osteopathic Medicine in 1975. She completed her residency at Trinity Lutheran Hospital, Kansas City, MO. Dr. Graves specializes in family practice.

■ **Carol L. Gurba, M.D.,** St. Joseph Anesthesia Services, P.C., 1000 Carondelet Dr., Kansas City 64114, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Gurba received her preliminary education at the University of Kansas and obtained her medical degree at the University of Kansas School of Medicine in 1982. She completed her residency at Hahnemann University Hospital, Philadelphia, PA. Dr. Gurba specializes in anesthesiology.

■ **David T. Howell, M.D.,** 555 Howdershell Road, Florissant 63031, has become a member of the Missouri State Medical Association. Dr. Howell received his preliminary education at Grinnell College and obtained his medical degree at the American University of the Caribbean in 1984. He completed his residency at Lutheran Medical Center, Kansas City, MO. Dr. Howell specializes in family practice.

■ **Donald R. Ingram, M.D.,** 2360 Truman Blvd., Crystal City 63019, has become a member of the St. Louis Metropolitan Medical Society. Dr. Ingram obtained his medical degree at the University of Illinois School of Medicine in 1956. He completed his residency at St. Louis City Hospital, St. Louis, MO. Dr. Ingram specializes in otolaryngology.

■ **Dorothy J. Jackson, M.D.,** 205 W. R.D. Mize Road, Blue Springs 64015, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Jackson received her preliminary education at the University of Missouri-Kansas City and obtained her medical degree at UMKC School of Medicine in 1979. She completed her residency at the Consortium for Health Education, Kansas City, MO. Dr. Jackson specializes in internal medicine.

■ **Kent S. Kapitan, M.D.,** Kansas City Pulmonary Clinic, Inc., 6420 Prospect, Suite T303, Kansas City 64132, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Kapitan received his preliminary education at the University of Wisconsin and obtained his medical degree at the University of Wisconsin School of Medicine in 1978. He completed his residency at the University of Iowa Hospitals and Clinics, Iowa

City, IA. Dr. Kapitan specializes in pulmonary medicine.

■ **Mark D. King, M.D.,** 7065 Flintstone Trail, #302, St. Louis 63123, has become a member of the Missouri State Medical Association. Dr. King received his preliminary education at the University of Missouri-Columbia and obtained his medical degree at the St. Louis University School of Medicine in 1984. He completed his residency at Deaconess Hospital, St. Louis, MO.

■ **Edward J. Kryshak, M.D.,** 3231 S. National, Springfield 65804, has become a member of the Greene County Medical Society. Dr. Kryshak received his preliminary education at the University of Wisconsin-Madison and obtained his medical degree at the University of Wisconsin-Madison School of Medicine in 1982. He completed his residency at Blodgett Memorial Medical Center, Grand Rapids, MI. Dr. Kryshak specializes in endocrinology.

■ **Robert R. Kuske, M.D.,** Washington University Medical Center, Radiation Oncology Center, Box 8131, 4939 Audubon Ave., St. Louis 63110, has become a member of the Missouri State Medical Association. Dr. Kuske received his preliminary education at Swarthmore College and obtained his medical degree at the University of Cincinnati College of Medicine in 1980. He completed his residency at the University of Cincinnati Medical Center, Cincinnati, OH. Dr. Kuske specializes in radiology.

■ **Charles A. Lane, M.D.,** 711 Grand Ave., Hannibal 63401, has become a member of the Northeast Missouri County Medical Society. Dr. Lane received his preliminary education at Illinois Wesleyan University and obtained his medical degree at the University of Illinois College of Medicine in 1984. He completed his residency at Jewish Hospital, St. Louis, MO. Dr. Lane specializes in general surgery.

■ **Priscilla E. Long, M.D.,** 711 Grand Avenue, Hannibal 63401, has become a member of the Missouri State Medical Association. Dr. Long received her preliminary education at Illinois Wesleyan University and obtained her medical degree at the St. Louis University School of Medicine in 1984. She completed her residency at the University of Kansas Medical Center, Kansas City, KS. Dr. Long specializes in internal medicine.

■ **Michael P. Nachtigal, M.D.,** 1900 S. National, Springfield 65804, has become a member of the Greene County Medical Society. Dr. Nachtigal received his preliminary education at Bethel College and obtained his medical degree at the University of Kansas in 1984. He completed his residency at the University of Oklahoma College of Medicine, Oklahoma City, OK. Dr. Nachtigal specializes in orthopedics.

■ **David F. Ouellette, M.D.,** 711 Grand Ave., Hannibal 63401, has become a member of the Missouri State Medical Association. Dr. Ouellette received his preliminary education at Brown University and obtained his medical degree at the St. Louis University School of Medicine in 1985. He completed his residency at Truman Medical Center-East, Kansas City, MO. Dr. Ouellette specializes in family practice.

■ **Michael T. Peterson, M.D.,** Anesthesiology, Inc., P.O. Box 975, Columbia 65202, has become a member of the Boone County Medical Society. Dr. Peterson received his preliminary education at Gonzaga University and obtained his medical degree at the Creighton University School of Medicine in 1972. He completed his residency at the University of Nebraska Medical Center, Omaha, NE. Dr. Peterson specializes in anesthesiology.

■ **Henry E. Purcell, M.D.,** 1 Barnes Hospital Plaza, St. Louis 63110, has become a member of the St. Louis Metropolitan Medical Society. Dr. Purcell obtained his medical degree at the St. Louis University School of Medicine in 1984. He completed his residency at Ohio State University, Columbus, OH. Dr. Purcell specializes in nephrology.

■ **Felix R. Santiago, M.D.,** St. Francis Medical Building, Suite #2, P.O. Box 518, Mountain View 65548, has become a member of the South Central Counties Medical Society. Dr. Santiago received his preliminary education at the University of Barcelona-Spain and obtained his medical degree at the University of Barcelona-Spain in 1962. He completed his residency at Lutheran Medical Center, Brooklyn, NY. Dr. Santiago specializes in general surgery.

■ **David M. Schlossman, M.D.,** Hematology-Oncology Associates, 3401 Berrywood Dr., Suite 303, Columbia 65201, has become a member of the Boone County Medical Society. Dr. Schlossman received his preliminary education at Columbia University and obtained his medical degree at the Duke University School of Medicine in 1979. He completed his residency at Duke University Medical Center, Durham, NC. Dr. Schlossman specializes in internal medicine.

■ **Nichols F. Shoults, M.D.,** 1900 S. National, #2300, Springfield 65804, has become a member of the Greene County Medical Society. Dr. Shoults received his preliminary education at Northeast Missouri State University and obtained his medical degree at the University of Missouri-Columbia School of Medicine in 1983. He completed his residency at the University of Missouri Hospital and Clinics, Columbia, MO. Dr. Schoults specializes in general surgery.

■ **Floyd D. Simpson, D.O.,** Route 3, Box 14-6, Nixa 65714, has become a member of the Greene County Medical Society. Dr. Simpson received his preliminary education at Buena Vista College and obtained his osteopathic degree at the College of Osteopathic Medicine and Surgery in 1972. He completed his residency at Cherokee Mental Health Institute, Iowa City, IA. Dr. Simpson specializes in psychiatry.

■ **Ronald M. Stewart, M.D.,** Suite 520, 4320 Warnall, Kansas City 64111, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Stewart received his preliminary education at Harvard College and obtained his medical degree at the University of Missouri-Columbia School of Medicine in 1985. He completed his residency at the University of Colorado, Denver, CO. Dr. Stewart specializes in obstetrics/gynecology.

■ **Ronald W. Swinfard, M.D.,** Dept. of Internal Medicine-Dermatology, M173 University of Missouri Hospital and Clinics, Columbia 65212, has become a member of the Boone County Medical Society. Dr. Swinfard received his preliminary education at the University of Missouri-Columbia and obtained his medical degree at the MU School of Medicine in 1978. He completed his residency at the University of Missouri Hospital and Clinics, Columbia, MO. Dr. Swinfard specializes in dermatology.

■ **Jerry Tobler, M.D.,** 3009 N. Ballas Road, Suite 131, St. Louis 63131, has become a member of the St. Louis Metropolitan Medical Society. Dr. Tobler obtained his medical degree at Yale University School of Medicine in 1983. He completed his residency at Mallinckrodt Institute of Radiology, Washington University, St. Louis, MO. Dr. Tobler specializes in diagnostic radiology.

ARMY RESERVE MEDICAL PROFILE NO.9

Dr. Holwick outside of hospital where she practices as a civilian traumatologist.

Dr. Holwick in operating room at Letterman Army Medical Center.

JANN L. HOLWICK, M.D.

General and Trauma Surgeon.
Captain, U.S. Army Reserve.

EDUCATION University of Southern California, B.S.; University of California School of Medicine.

RESIDENCY Harbor General Hospital—UCLA Medical Center.

HOSPITAL AFFILIATIONS St. Luke Hospital; Huntington Memorial Hospital, Pasadena, California; Traumatologist, Arcadia Methodist Hospital, Arcadia, California.

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References
1. *USP DI Update, September/October 1988, p 120.*
2. *Br J Clin Pharmacol 1985;20:710-713.*
3. *Data on file, Lilly Research Laboratories.*
4. *Scand J Gastroenterol 1987;22(suppl 136):61-70.*
5. *Am J Gastroenterol 1989;84:769-774.*

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3. In patients with normal renal function and uncomplicated hepatic dysfunction, the disposition of nizatidine is similar to that in normal subjects.

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Drug Interactions—No interactions have been observed with theophylline, chlordiazepoxide, lorazepam, lidocaine, phenytoin, and warfarin. Axid does not inhibit the cytochrome P-450 enzyme system; therefore, drug interactions mediated by inhibition of hepatic metabolism are not expected to occur. In patients given very high doses (3,900 mg) of aspirin daily, increased serum salicylate levels were seen when nizatidine, 150 mg b.i.d., was administered concurrently.

Carcinogenesis, Mutagenesis, Impairment of Fertility—A two-year oral carcinogenicity study in rats with doses as high as 500 mg/kg/day (about 80 times the recommended daily therapeutic dose) showed no evidence of a carcinogenic effect. There was a dose-related increase in the density of enterochromaffin-like (ECL) cells in the gastric oxyntic mucosa. In a two-year study in mice, there was no evidence of a carcinogenic effect in male mice, although hyperplastic nodules of the liver were increased in the high-dose males as compared with placebo. Female mice given the high dose of Axid (2,000 mg/kg/day, about 330 times the human dose) showed marginally statistically significant increases in hepatic carcinoma and hepatic nodular hyperplasia with no numerical increase seen in any of the other dose groups. The rate of hepatic carcinoma in the high-dose animals was within the historical control limits seen for the strain of mice used. The female mice were given a dose larger than the maximum tolerated dose, as indicated by excessive (30%) weight decrement as compared with concurrent controls and evidence of mild liver injury (transaminase elevations). The occurrence of a marginal finding at high dose only in animals given an excessive and somewhat hepatotoxic dose, with no evidence of a carcinogenic effect in rats, male mice, and female mice (given up to 360 mg/kg/day, about 60 times the human dose), and a negative mutagenicity battery are not considered evidence of a carcinogenic potential for Axid.

Axid was not mutagenic in a battery of tests performed to evaluate its potential genetic toxicity, including bacterial mutation tests, unscheduled DNA synthesis, sister chromatid exchange, mouse lymphoma assay, chromosome aberration tests, and a micronucleus test.

In a two-generation, perinatal and postnatal fertility study in rats, doses of nizatidine up to 650 mg/kg/day produced no adverse effects on the reproductive performance of parental animals or their progeny.

Pregnancy—Teratogenic Effects—Pregnancy Category C—Oral reproduction studies in rats at doses up to 300 times the human dose and in Dutch Belted rabbits at doses up to 55 times the human dose revealed no evidence of impaired fertility or teratogenic effect; but, at a dose equivalent to 300 times the human dose, treated rabbits had abortions, decreased number of live fetuses, and depressed fetal weights. On intravenous administration to pregnant New Zealand White rabbits, nizatidine at 20 mg/kg produced cardiac enlargement, coarctation of the aortic arch, and cutaneous edema in one fetus, and at 50 mg/kg, it produced ventricular anomaly, distended abdomen, spina bifida, hydrocephaly, and enlarged heart in one fetus. There are, however, no adequate and well-controlled studies in pregnant women. It is also not known whether nizatidine can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. Nizatidine should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers—Studies in lactating women have shown that 0.1% of an oral dose is secreted in human milk in proportion to plasma concentrations. Because of growth depression in pups reared by treated lactating rats, a decision should be made whether to discontinue nursing or the drug, taking into account the importance of the drug to the mother.

Pediatric Use—Safety and effectiveness in children have not been established.

Use in Elderly Patients—Healing rates in elderly patients were similar to those in younger age groups as were the rates of adverse events and laboratory test abnormalities. Age alone may not be an important factor in the disposition of nizatidine. Elderly patients may have reduced renal function.

Adverse Reactions: Clinical trials of varying durations included almost 5,000 patients. Among the more common adverse events in domestic placebo-controlled trials of over 1,900 nizatidine patients and over 1,300 on placebo, sweating (1% vs 0.2%), urticaria (0.5% vs <0.01%), and somnolence (2.4% vs 1.3%) were significantly more common with nizatidine. It was not possible to determine whether a variety of less common events was due to the drug.

Hepatic—Hepatocellular injury (elevated liver enzyme tests or alkaline phosphatase) possibly or probably related to nizatidine occurred in some patients. In some cases, there was marked elevation (>500 IU/L) in SGOT or SGPT and, in a single instance, SGPT was >2,000 IU/L. The incidence of elevated liver enzymes overall and elevations of up to three times the upper limit of normal, however, did not significantly differ from that in placebo patients. Hepatitis and jaundice have been reported. All abnormalities were reversible after discontinuation of Axid.

Cardiovascular—In clinical pharmacology studies, short episodes of asymptomatic ventricular tachycardia occurred in two individuals administered Axid and in three untreated subjects.

CNS—Rare cases of reversible mental confusion have been reported.

Endocrine—Clinical pharmacology studies and controlled clinical trials showed no evidence of antiandrogenic activity due to nizatidine. Impotence and decreased libido were reported with equal frequency by patients on nizatidine and those on placebo. Gynecomastia has been reported rarely.

Hematologic—Fatal thrombocytopenia was reported in a patient treated with nizatidine and another H_2-receptor antagonist. This patient had previously experienced thrombocytopenia while taking other drugs. Rare cases of thrombocytopenic purpura have been reported.

Integumental—Sweating and urticaria were reported significantly more frequently in nizatidine- than in placebo-treated patients. Rash and exfoliative dermatitis were also reported.

Hypersensitivity—As with other H_2-receptor antagonists, rare cases of anaphylaxis following nizatidine administration have been reported. Because cross-sensitivity among this class has been observed, H_2-receptor antagonists should not be administered to those with a history of hypersensitivity to these agents. Rare episodes of hypersensitivity reactions (eg, bronchospasm, laryngeal edema, rash, and eosinophilia) have been reported.

Other—Hyperuricemia unassociated with gout or nephrolithiasis was reported. Eosinophilia, fever, and nausea related to nizatidine have been reported.

Overdosage: Overdoses of Axid have been reported rarely. If overdosage occurs, activated charcoal, emesis, or lavage should be considered along with clinical monitoring and supportive therapy. Renal dialysis for four to six hours increased plasma clearance by approximately 84%.

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■ **Robert J. Tyndall, M.D.,** 1000 East Primrose, Springfield 65807, has become a member of the Greene County Medical Society. Dr. Tyndall received his preliminary education at MSSC-Joplin and obtained his medical degree at the University of Oklahoma School of Medicine in 1985. He completed his residency at the University of Kansas, Kansas City, KS. Dr. Tyndall specializes in neurology.

■ **Terrence L. Wood, M.D.,** Westowne IV, Suite 205, Liberty 64068, has become a member of the Clay-Platte County Medical Society. Dr. Wood received his preliminary education at Drury College and obtained his medical degree at the University of Missouri-Columbia School of Medicine in 1984. He completed his residency at James Whitcomb Rily Hospital, University of Indiana, Indianapolis, IN. Dr. Wood specializes in otolaryngology.

■ **Gray W. Woods, M.D.,** 2316 Kenwood, Kansas City 64108, has become a member of the Missouri State Medical Association. Dr. Woods obtained his preliminary education and his medical degree at the University of Missouri-Kansas City in 1983. He completed his residency at the University of Missouri, Kansas City, MO. Dr. Woods specializes in ophthalmology.

■ Resident Sections

MSMA Only

Lisa Bernard, M.D. — *anesthesiology*
Christie B. Phelan, M.D. — *radiology*
Gregory A. Hill, D.O. — *internal medicine*
Laura J. Jantzen, M.D. — *obstetrics/gynecology*
Bruce Monson, M.D. — *radiology*
Curtis C. Stautz, M.D. — *diagnostic radiology*

Metro Med of Greater Kansas City

Robert J. McQuillan, M.D. — *anesthesiology*

■ Student Members

University of Missouri-Kansas City

Michael C. Hodges
Tripti C. Kataria
Brent Robinson
Robert W. Schabbing

Washington University

Paul Cummings

St. Louis University

Stuart D. Helms

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Manuscripts

Manuscripts should be typewritten, double-spaced, and the original with one copy submitted. Retain another copy for proofreading. Please number the pages of your manuscript. Manuscripts are not returned. Hospital and University appointments of the author(s) should accompany the manuscript. A synopsis-abstract of no more than 75 words should accompany the manuscript. Manuscripts may be submitted on 5¼ or 3½ floppy disks using WordPerfect 4.2 or below.

References

References should be cited in numerical order in the text and arranged at the end of the article in the same order in which they are cited. The reference should give name of author, title of article, name of periodical, volume number, initial page number and year. Authors are responsible for reference accuracy.

Illustrations

Illustrations should be glossy prints or drawings in India ink on white paper. They should not be mounted and name of author and figure number should be penciled lightly on the back. Legends should appear on a separate sheet.

Legal difficulties may arise from unauthorized use of names, initials or photographs in which individuals can be identified. Permission should be secured from patient or legal guardian and signed duplicate or photostat submitted with such photographs or identification. The Editor and Editorial Board assume no responsibility for the opinions and claims expressed in articles contributed by authors. If citation of an institution related to the article is made, approval of the chief of service should be given in a letter accompanying the article.

Reprints

Reprint order blanks will accompany proof, which will be sent to authors prior to publication.

Editorials

Editorials should be written in clear, concise language. Length should be about two or three pages typed with double spacing.

Letters

Letters will be published at the discretion of the editor, managing editor, and Editorial Board.

Deadlines

All material other than scientific should be received prior to the first of the month preceding month of publication.

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Physicians Wanted

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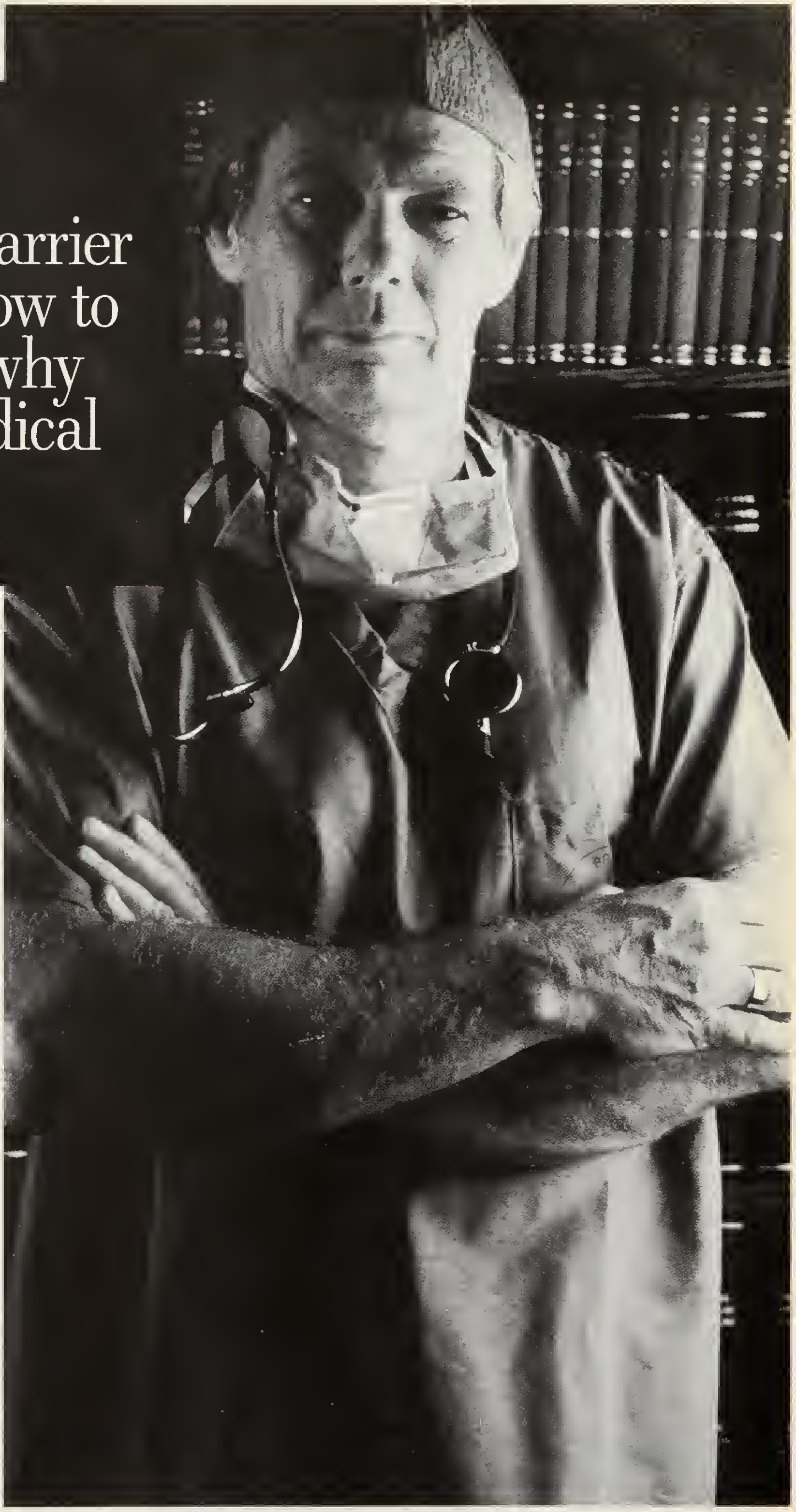

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Description: Yohimbine is a 3a-15a-20B-17a-hydroxy Yohimbine-16a-carboxylic acid methyl ester. The alkaloid is found in Rubaceae and related trees. Also in Rauwolfia Serpentina (L) Benth. Yohimbine is an indolalkylamine alkaloid with chemical similarity to reserpine. It is a crystalline powder, odorless. Each compressed tablet contains (1/12 gr.) 5.4 mg of Yohimbine Hydrochloride.

Action: Yohimbine blocks presynaptic alpha-2 adrenergic receptors. Its action on peripheral blood vessels resembles that of reserpine, though it is weaker and of short duration. Yohimbine's peripheral autonomic nervous system effect is to increase parasympathetic (cholinergic) and decrease sympathetic (adrenergic) activity. It is to be noted that in male sexual performance, erection is linked to cholinergic activity and to alpha-2 adrenergic blockade which may theoretically result in increased penile inflow, decreased penile outflow or both.

Yohimbine exerts a stimulating action on the mood and may increase anxiety. Such actions have not been adequately studied or related to dosage although they appear to require high doses of the drug. Yohimbine has a mild anti-diuretic action, probably via stimulation of hypothalmic centers and release of posterior pituitary hormone.

Reportedly, Yohimbine exerts no significant influence on cardiac stimulation and other effects mediated by B-adrenergic receptors, its effect on blood pressure, if any, would be to lower it; however no adequate studies are at hand to quantitate this effect in terms of Yohimbine dosage.

Indications: Yocon® is indicated as a sympathicolytic and mydriatric. It may have activity as an aphrodisiac.

Contraindications: Renal diseases, and patient's sensitive to the drug. In view of the limited and inadequate information at hand, no precise tabulation can be offered of additional contraindications.

Warning: Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

Adverse Reactions: Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral a-adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.[1,2] Also dizziness, headache, skin flushing reported when used orally.[1,3]

Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.[1,3,4] 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to ½ tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.[3]

How Supplied: Oral tablets of Yocon® 1/12 gr. 5.4 mg in bottles of 100's NDC 53159-001-01 and 1000's NDC 53159-001-10.

References:

1. A. Morales et al., New England Journal of Medicine: 1221. November 12, 1981.
2. Goodman, Gilman — The Pharmacological basis of Therapeutics 6th ed., p. 176-188. McMillan December Rev. 1/85.
3. Weekly Urological Clinical letter, 27:2, July 4, 1983.
4. A. Morales et al., The Journal of Urology 128: 45-47, 1982.

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VASOTEC®

(ENALAPRIL MALEATE | MSD)

VASOTEC is available in 2.5-mg, 5-mg, 10-mg, and 20-mg tablet strengths.

Contraindications: VASOTEC® (Enalapril Maleate, MSD) is contraindicated in patients who are hypersensitive to this product and in patients with a history of angioedema related to previous treatment with an ACE inhibitor.

Warnings: *Angioedema* Angioedema of the face, extremities, lips, tongue, glottis, and/or larynx has been reported in patients treated with ACE inhibitors, including VASOTEC. In such cases, VASOTEC should be promptly discontinued and the patient carefully observed until the swelling disappears In instances where swelling has been confined to the face and lips, the condition has generally resolved without treatment, although antihistamines have been useful in relieving symptoms Angioedema associated with laryngeal edema may be fatal **Where there is involvement of the tongue, glottis, or larynx likely to cause airway obstruction, appropriate therapy, e.g., subcutaneous epinephrine solution 1:1000 (0.3 mL to 0.5 mL), should be promptly administered.** (See ADVERSE REACTIONS.)

Hypotension Excessive hypotension is rare in uncomplicated hypertensive patients treated with VASOTEC alone Patients with heart failure given VASOTEC commonly have some reduction in blood pressure, especially with the first dose, but discontinuation of therapy for continuing symptomatic hypotension usually is not necessary when dosing instructions are followed, caution should be observed when initiating therapy (See DOSAGE AND ADMINISTRATION.) Patients at risk for excessive hypotension, sometimes associated with oliguria and/or progressive azotemia and rarely with acute renal failure and/or death, include those with the following conditions or characteristics: heart failure, hyponatremia, high-dose diuretic therapy, recent intensive diuresis or increase in diuretic dose, renal dialysis, or severe volume and/or salt depletion of any etiology. It may be advisable to eliminate the diuretic (except in patients with heart failure), reduce the diuretic dose, or increase salt intake cautiously before initiating therapy with VASOTEC in patients at risk for excessive hypotension who are able to tolerate such adjustments. (See PRECAUTIONS, *Drug Interactions* and ADVERSE REACTIONS.) In patients at risk for excessive hypotension, therapy should be started under very close medical supervision and such patients should be followed closely for the first two weeks of treatment and whenever the dose of enalapril and/or diuretic is increased Similar considerations may apply to patients with ischemic heart disease or cardiovascular disease in whom an excessive fall in blood pressure could result in a myocardial infarction or cerebrovascular accident. If excessive hypotension occurs, the patient should be placed in the supine position and, if necessary, receive an intravenous infusion of normal saline A transient hypotensive response is not a contraindication to further doses of VASOTEC, which usually can be given without difficulty once the blood pressure has stabilized If symptomatic hypotension develops, a dose reduction or discontinuation of VASOTEC or concomitant diuretic may be necessary

Neutropenia/Agranulocytosis: Another ACE inhibitor, captopril, has been shown to cause agranulocytosis and bone marrow depression, rarely in uncomplicated patients but more frequently in patients with renal impairment, especially if they also have a collagen vascular disease Available data from clinical trials of enalapril are insufficient to show that enalapril does not cause agranulocytosis at similar rates Foreign marketing experience has revealed several cases of neutropenia or agranulocytosis in which a causal relationship to enalapril cannot be excluded Periodic monitoring of white blood cell counts in patients with collagen vascular disease and renal disease should be considered

Precautions: *General Impaired Renal Function* As a consequence of inhibiting the renin-angiotensin-aldosterone system, changes in renal function may be anticipated in susceptible individuals In patients with severe heart failure whose renal function may depend on the activity of the renin-angiotensin-aldosterone system, treatment with ACE inhibitors, including VASOTEC, may be associated with oliguria and/or progressive azotemia and rarely with acute renal failure and/or death.

In clinical studies in hypertensive patients with unilateral or bilateral renal artery stenosis, increases in blood urea nitrogen and serum creatinine were observed in 20% of patients These increases were almost always reversible upon discontinuation of enalapril and/or diuretic therapy In such patients, renal function should be monitored during the first few weeks of therapy

Some patients with hypertension or heart failure with no apparent preexisting renal vascular disease have developed increases in blood urea and serum creatinine, usually minor and transient, especially when VASOTEC has been given concomitantly with a diuretic. This is more likely to occur in patients with preexisting renal impairment. Dosage reduction and/or discontinuation of the diuretic and/or VASOTEC may be required

Evaluation of patients with hypertension or heart failure should always include assessment of renal function. (See DOSAGE AND ADMINISTRATION.)

Hyperkalemia Elevated serum potassium (>5.7 mEq/L) was observed in approximately 1% of hypertensive patients in clinical trials. In most cases these were isolated values which resolved despite continued therapy Hyperkalemia was a cause of discontinuation of therapy in 0.28% of hypertensive patients In clinical trials in heart failure, hyperkalemia was observed in 3.8% of patients, but was not a cause for discontinuation.

Risk factors for the development of hyperkalemia include renal insufficiency, diabetes mellitus, and the concomitant use of potassium-sparing diuretics, potassium supplements, and/or potassium-containing salt substitutes, which should be used cautiously, if at all, with VASOTEC. (See *Drug Interactions*)

Surgery/Anesthesia In patients undergoing major surgery or during anesthesia with agents that produce hypotension, enalapril may block angiotensin II formation secondary to compensatory renin release If hypotension occurs and is considered to be due to this mechanism, it can be corrected by volume expansion.

Information for Patients

Angioedema Angioedema, including laryngeal edema, may occur especially following the first dose of enalapril Patients should be so advised and told to report immediately any signs or symptoms suggesting angioedema (swelling of face, extremities, eyes, lips, tongue, difficulty in swallowing or breathing) and to take no more drug until they have consulted with the prescribing physician.

Hypotension. Patients should be cautioned to report lightheadedness, especially during the first few days of therapy If actual syncope occurs, the patients should be told to discontinue the drug until they have consulted with the prescribing physician.

All patients should be cautioned that excessive perspiration and dehydration may lead to an excessive fall in blood pressure because of reduction in fluid volume. Other causes of volume depletion such as vomiting or diarrhea may also lead to a fall in blood pressure; patients should be advised to consult with the physician.

Hyperkalemia Patients should be told not to use salt substitutes containing potassium without consulting their physician.

Neutropenia Patients should be told to report promptly any indication of infection (e.g., sore throat, fever) which may be a sign of neutropenia

NOTE: As with many other drugs, certain advice to patients being treated with enalapril is warranted This information is intended to aid in the safe and effective use of this medication. It is not a disclosure of all possible adverse or intended effects.

Drug Interactions

Hypotension. Patients on Diuretic Therapy Patients on diuretics and especially those in whom diuretic therapy was recently instituted may occasionally experience an excessive reduction of blood pressure after initiation of therapy with enalapril. The possibility of hypotensive effects with enalapril can be minimized by either discontinuing the diuretic or increasing the salt intake prior to initiation of treatment with enalapril. If it is necessary to continue the diuretic, provide close medical supervision after the initial dose for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and DOSAGE AND ADMINISTRATION.)

Agents Causing Renin Release The antihypertensive effect of VASOTEC is augmented by antihypertensive agents that cause renin release (e.g., diuretics).

Other Cardiovascular Agents: VASOTEC has been used concomitantly with beta-adrenergic-blocking agents, methyldopa, nitrates, calcium-blocking agents, hydralazine, prazosin, and digoxin without evidence of clinically significant adverse interactions

Agents Increasing Serum Potassium. VASOTEC attenuates potassium loss caused by thiazide-type diuretics Potassium-sparing diuretics (e.g., spironolactone, triamterene, or amiloride), potassium supplements, or potassium-containing salt substitutes may lead to significant increases in serum potassium. Therefore, if concomitant use of these agents is indicated because of demonstrated hypokalemia, they should be used with caution and with frequent monitoring of serum potassium Potassium-sparing agents should generally not be used in patients with heart failure receiving VASOTEC.

Lithium: Lithium toxicity has been reported in patients receiving lithium concomitantly with drugs which cause elimination of sodium, including ACE inhibitors A few cases of lithium toxicity have been reported in patients receiving concomitant VASOTEC and lithium and were reversible upon discontinuation of both drugs It is recommended that serum lithium levels be monitored frequently if enalapril is administered concomitantly with lithium.

Pregnancy – Category C: There was no fetotoxicity or teratogenicity in rats treated with up to 200 mg/kg/day of enalapril (333 times the maximum human dose). Fetotoxicity, expressed as a decrease in average fetal weight, occurred in rats given 1200 mg/kg/day of enalapril but did not occur when these animals were supplemented with saline Enalapril was not teratogenic in rabbits However, maternal and fetal toxicity occurred in some rabbits at doses of 1 mg/kg/day or more Saline supplementation prevented the maternal and fetal toxicity seen at doses of 3 and 10 mg/kg/day, but not at 30 mg/kg/day (50 times the maximum human dose).

Radioactivity was found to cross the placenta following administration of labeled enalapril to pregnant hamsters

There are no adequate and well-controlled studies of enalapril in pregnant women. However, data are available that show enalapril crosses the human placenta Because the risk of fetal toxicity with the use of ACE inhibitors has not been clearly defined, VASOTEC® (Enalapril Maleate, MSD) should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus

Postmarketing experience with all ACE inhibitors thus far suggests the following with regard to pregnancy outcome Inadvertent exposure limited to the first trimester of pregnancy has not been reported to affect fetal outcome adversely Fetal exposure during the second and third trimesters of pregnancy has been associated with fetal and neonatal morbidity and mortality

When ACE inhibitors are used during the later stages of pregnancy, there have been reports of hypotension and decreased renal perfusion in the newborn Oligohydramnios in the mother has also been reported, presumably representing decreased renal function in the fetus Infants exposed *in utero* to ACE inhibitors should be closely observed for hypotension, oliguria, and hyperkalemia If oliguria occurs, attention should be directed toward support of blood pressure and renal perfusion with the administration of fluids and pressors as appropriate Problems associated with prematurity such as patent ductus arteriosus have occurred in association with maternal use of ACE inhibitors, but it is not clear whether they are related to ACE inhibition, maternal hypertension, or the underlying prematurity

Nursing Mothers Milk in lactating rats contains radioactivity following administration of ^{14}C enalapril maleate It is not known whether this drug is secreted in human milk Because many drugs are secreted in human milk, caution should be exercised when VASOTEC is given to a nursing mother

Pediatric Use. Safety and effectiveness in children have not been established

Adverse Reactions: VASOTEC has been evaluated for safety in more than 10,000 patients, including over 1000 patients treated for one year or more VASOTEC has been found to be generally well tolerated in controlled clinical trials involving 2987 patients

HYPERTENSION The most frequent clinical adverse experiences in controlled trials were headache (5.2%), dizziness (4.3%), and fatigue (3%).

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in controlled clinical trials were diarrhea (1.4%), nausea (1.4%), rash (1.4%), cough (1.3%), orthostatic effects (1.2%), and asthenia (1.1%).

HEART FAILURE The most frequent clinical adverse experiences in both controlled and uncontrolled trials were dizziness (7.9%), hypotension (6.7%), orthostatic effects (2.2%), syncope (2.2%), cough (2.2%), chest pain (2.1%), and diarrhea (2.1%).

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in both controlled and uncontrolled clinical trials were: fatigue (1.8%), headache (1.8%), abdominal pain (1.6%), asthenia (1.6%), orthostatic hypotension (1.6%), vertigo (1.6%), angina pectoris (1.5%), nausea (1.3%), vomiting (1.3%), bronchitis (1.3%), dyspnea (1.3%), urinary tract infection (1.3%), rash (1.3%), and myocardial infarction (1.2%).

Other serious clinical adverse experiences occurring since the drug was marketed or adverse experiences occurring in 0.5% to 1% of patients with hypertension or heart failure in clinical trials in order of decreasing severity within each category

Cardiovascular Cardiac arrest; myocardial infarction or cerebrovascular accident, possibly secondary to excessive hypotension in high-risk patients (see WARNINGS, *Hypotension*); pulmonary embolism and infarction, pulmonary edema; rhythm disturbances, atrial fibrillation, palpitation.

Digestive Ileus, pancreatitis, hepatitis (hepatocellular or cholestatic jaundice), melena, anorexia, dyspepsia, constipation, glossitis, stomatitis, dry mouth

Musculoskeletal Muscle cramps

Nervous/Psychiatric: Depression, confusion, ataxia, somnolence, insomnia, nervousness, paresthesia

Urogenital: Renal failure, oliguria, renal dysfunction (see PRECAUTIONS and DOSAGE AND ADMINISTRATION).

Respiratory Bronchospasm, rhinorrhea, sore throat and hoarseness, asthma, upper respiratory infection

Skin Exfoliative dermatitis, toxic epidermal necrolysis, Stevens-Johnson syndrome, herpes zoster, erythema multiforme, urticaria, pruritus, alopecia, flushing, hyperhidrosis

Special Senses Blurred vision, taste alteration, anosmia, tinnitus, conjunctivitis, dry eyes, tearing

A symptom complex has been reported which may include a positive ANA, an elevated erythrocyte sedimentation rate, arthralgias/arthritis, myalgias, fever, serositis, vasculitis, leukocytosis, eosinophilia, photosensitivity, rash, and other dermatologic manifestations.

Angioedema: Angioedema has been reported in patients receiving VASOTEC (0.2%). Angioedema associated with laryngeal edema may be fatal If angioedema of the face, extremities, lips, tongue, glottis, and/or larynx occurs, treatment with VASOTEC should be discontinued and appropriate therapy instituted immediately (See WARNINGS.)

Hypotension: In the hypertensive patients, hypotension occurred in 0.9% and syncope occurred in 0.5% of patients following the initial dose or during extended therapy Hypotension or syncope was a cause for discontinuation of therapy in 0.1% of hypertensive patients In heart failure patients, hypotension occurred in 6.7% and syncope occurred in 2.2% of patients Hypotension or syncope was a cause for discontinuation of therapy in 1.9% of patients with heart failure (See WARNINGS.)

Clinical Laboratory Test Findings.

Serum Electrolytes: Hyperkalemia (see PRECAUTIONS), hyponatremia

Creatinine, Blood Urea Nitrogen In controlled clinical trials, minor increases in blood urea nitrogen and serum creatinine, reversible upon discontinuation of therapy, were observed in about 0.2% of patients with essential hypertension treated with VASOTEC alone. Increases are more likely to occur in patients receiving concomitant diuretics or in patients with renal artery stenosis. (See PRECAUTIONS.) In patients with heart failure who were also receiving diuretics with or without digitalis, increases in blood urea nitrogen or serum creatinine, usually reversible upon discontinuation of VASOTEC and/or other concomitant diuretic therapy, were observed in about 11% of patients Increases in blood urea nitrogen or creatinine were a cause for discontinuation in 1.2% of patients.

Hemoglobin and Hematocrit Small decreases in hemoglobin and hematocrit (mean decreases of approximately 0.3 g% and 1.0 vol %, respectively) occur frequently in either hypertension or heart failure patients treated with VASOTEC but are rarely of clinical importance unless another cause of anemia coexists In clinical trials, less than 0.1% of patients discontinued therapy due to anemia

Other (Causal Relationship Unknown) In marketing experience, rare cases of neutropenia, thrombocytopenia, and bone marrow depression have been reported A few cases of hemolysis have been reported in patients with G6PD deficiency

Liver Function Tests. Elevations of liver enzymes and/or serum bilirubin have occurred

Dosage and Administration: *Hypertension:* In patients who are currently being treated with a diuretic, symptomatic hypotension occasionally may occur following the initial dose of VASOTEC The diuretic should, if possible, be discontinued for two to three days before beginning therapy with VASOTEC to reduce the likelihood of hypotension (See WARNINGS.) If the patient's blood pressure is not controlled with VASOTEC alone, diuretic therapy may be resumed.

If the diuretic cannot be discontinued, an initial dose of 2.5 mg should be used under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and PRECAUTIONS, *Drug Interactions*)

The recommended initial dose in patients not on diuretics is 5 mg once a day Dosage should be adjusted according to blood pressure response The usual dosage range is 10 to 40 mg per day administered in a single dose or in two divided doses In some patients treated once daily, the antihypertensive effect may diminish toward the end of the dosing interval In such patients, an increase in dosage or twice-daily administration should be considered If blood pressure is not controlled with VASOTEC alone, a diuretic may be added.

Concomitant administration of VASOTEC with potassium supplements, potassium salt substitutes, or potassium-sparing diuretics may lead to increases of serum potassium (see PRECAUTIONS)

Dosage Adjustment in Hypertensive Patients with Renal Impairment: The usual dose of enalapril is recommended for patients with a creatinine clearance > 30 mL/min (serum creatinine of up to approximately 3 mg/dL) For patients with creatinine clearance ≤ 30 mL/min (serum creatinine ≥ 3 mg/dL), the first dose is 2.5 mg once daily The dosage may be titrated upward until blood pressure is controlled or to a maximum of 40 mg daily.

Heart Failure: VASOTEC is indicated as adjunctive therapy with diuretics and digitalis The recommended starting dose is 2.5 mg once or twice daily After the initial dose of VASOTEC, the patient should be observed under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour (See WARNINGS and PRECAUTIONS, *Drug Interactions.*) If possible, the dose of the diuretic should be reduced, which may diminish the likelihood of hypotension The appearance of hypotension after the initial dose of VASOTEC does not preclude subsequent careful dose titration with the drug, following effective management of the hypotension. The usual therapeutic dosing range for the treatment of heart failure is 5 to 20 mg daily given in two divided doses. The maximum daily dose is 40 mg Once-daily dosing has been effective in a controlled study, but nearly all patients in this study were given 40 mg, the maximum recommended daily dose, and there has been much more experience with twice-daily dosing In addition, in a placebo-controlled study which demonstrated reduced mortality in patients with severe heart failure (NYHA Class IV), patients were treated with 2.5 to 40 mg per day of VASOTEC, almost always administered in two divided doses. (See CLINICAL PHARMACOLOGY, *Pharmacodynamics and Clinical Effects.*) Dosage may be adjusted depending upon clinical or hemodynamic response (See WARNINGS.)

Dosage Adjustment in Patients with Heart Failure and Renal Impairment or Hyponatremia In patients with heart failure who have hyponatremia (serum sodium < 130 mEq/L) or with serum creatinine >1.6 mg/dL, therapy should be initiated at 2.5 mg daily under close medical supervision. (See DOSAGE AND ADMINISTRATION, *Heart Failure*, WARNINGS, and PRECAUTIONS, *Drug Interactions.*) The dose may be increased to 2.5 mg b.i.d., then 5 mg b.i.d. and higher as needed, usually at intervals of four days or more, if at the time of dosage adjustment there is not excessive hypotension or significant deterioration of renal function. The maximum daily dose is 40 mg

For more detailed information, consult your MSD Representative or see Prescribing Information, Merck Sharp & Dohme, Division of Merck & Co., INC., West Point, PA 19486. J9VS61R2(819)

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For a Brief Summary of Prescribing Information, please see the last page of this advertisement.

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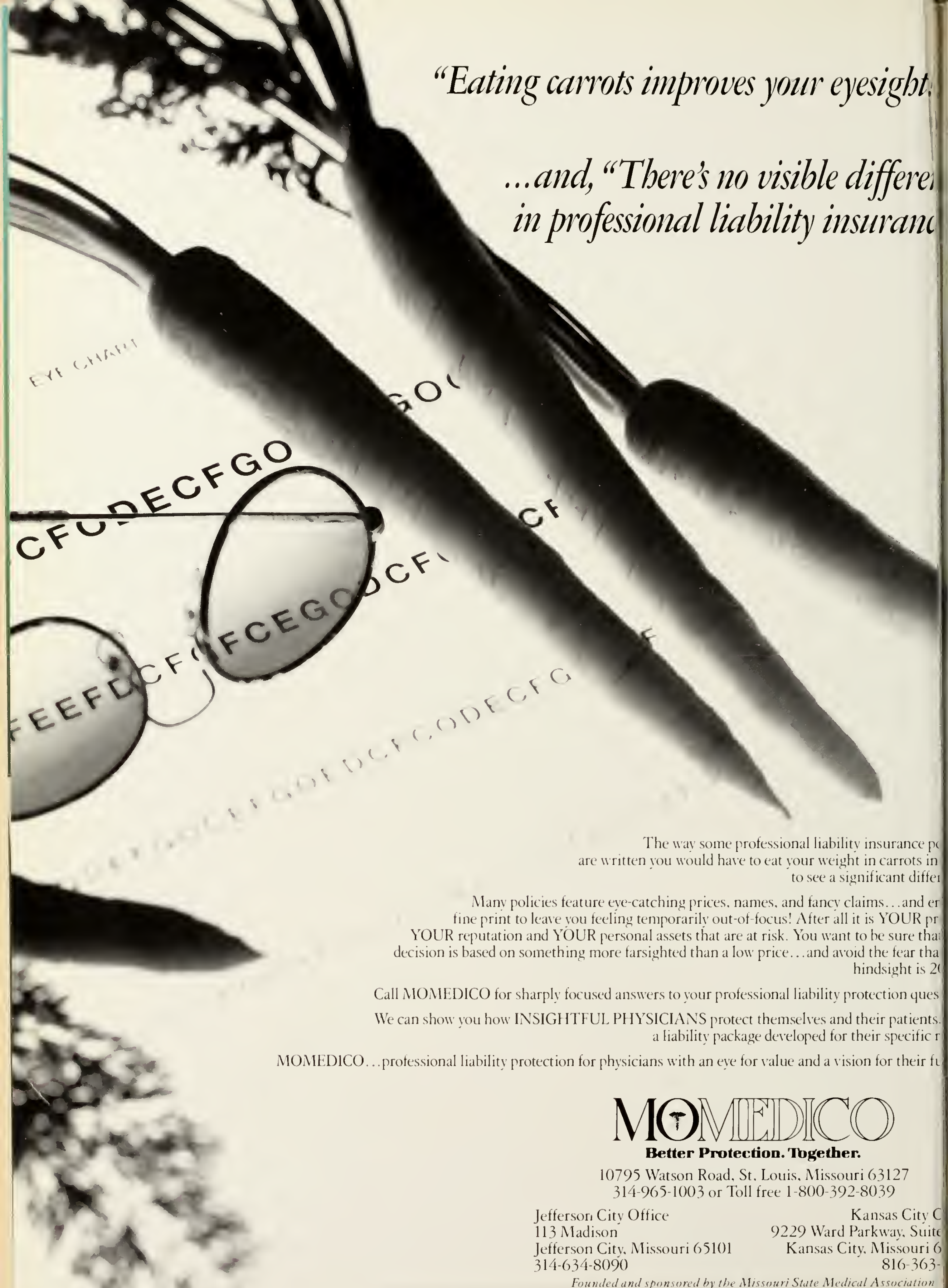

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"Veteran's Garden" is an original oil on masonite painting by **Liza Streett**, a St. Louis artist. Painted in 1987, it is a view of a garden in the neighborhood of her studio in Maplewood, Mo. The painting is owned by Mr. and Mrs. T.B. Crouppen. Ms. Streett works in oils on portraits, still lifes and landscapes.

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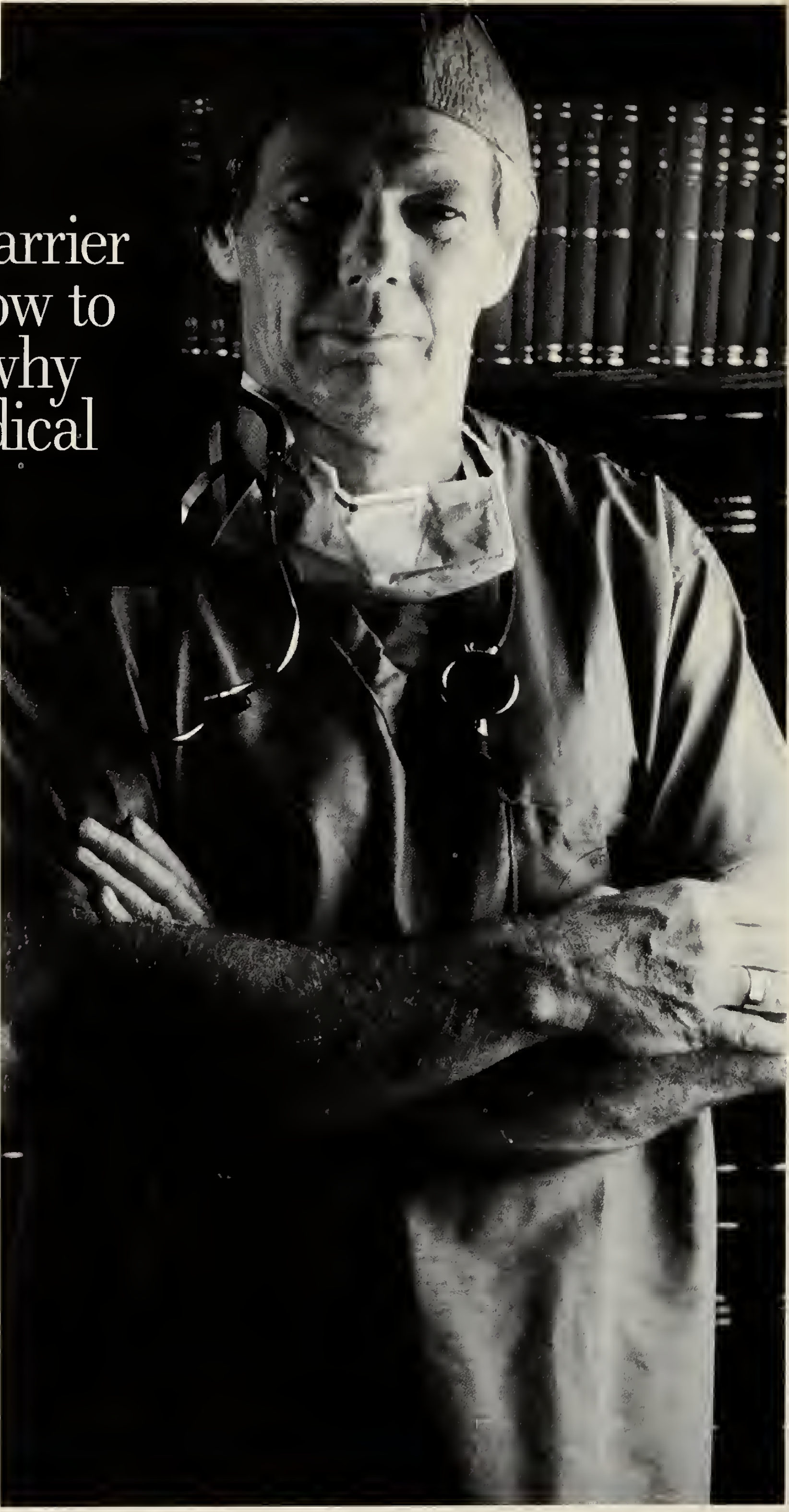

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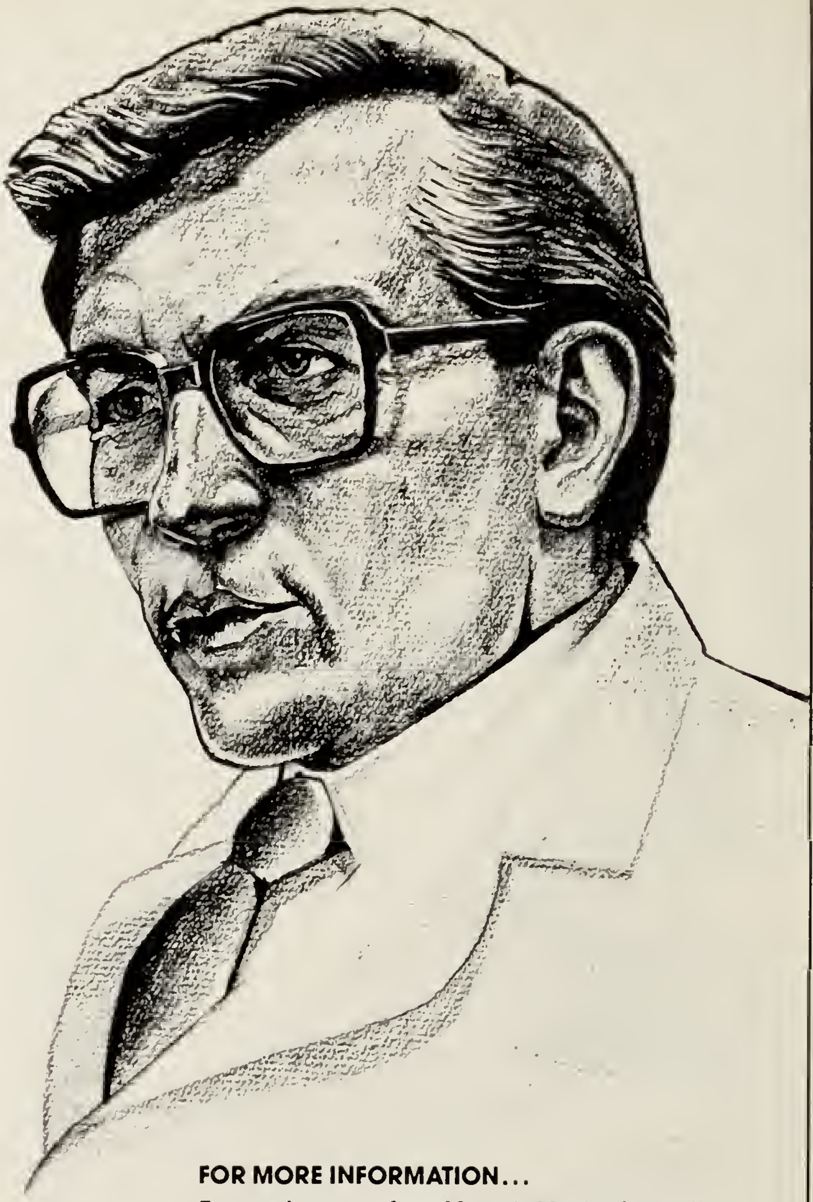

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EDITOR'S DESK

What Price Do We Pay for Managed Health Care?

by Lawrence Kahn, M.D.
Guest Editor

Lawrence Kahn, M.D., is a professor of pediatrics at the Washington University School of Medicine. Dr. Kahn was one of the first physicians in Missouri to get involved in managed health care and has been actively involved since 1969.

The following letters* represent correspondence between a national health care management company and the author of this editorial:

> *Dear Member:*
>
> *According to the Plan Provisions, we are unable to provide benefits on {the} recently submitted claim(s). This service must have a referral from a Plan Physician and we have no record of a referral authorization.*
>
> *If you are not an ANY-HCMCO** Medicare Member and believe this determination is not correct, please refer to your Certificate of Coverage under Member Grievance Process or contact the Member Services Department using the number listed on your ID card.*
>
> *ANY-HCMCO*
> *Claims Department*

> *Member Services — Appeals*
> *ANY-HCMCO*
>
> *Gentlemen:*
>
> *I have your notification indicating rejections of claims for payment of professional services rendered to me by two subspecialist physicians. You state you have no record of a referral authorization by my primary care physician. This must be an administrative error.*
>
> *My primary care physician is affiliated with ANY-HCMCO and is familiar with your regulations involving consultations. A referral (#90003) was provided by him on January 30. The consultant received it, saw me in consultation and performed a procedure that included a biopsy. Consequent to that, the biopsy specimen was sent to a pathologist.*
>
> *The consultant recorded the primary care physician's referral and submitted a claim to you for payment on February 2, 1990 and, after not being paid, resubmitted it on March 29. The pathologist submitted a claim for payment on March 15 with the name of the referring consultant recorded. That claim was rejected May 8. Now, I am being billed for the fee.*
>
> *All necessary procedures were followed in connection with these claims. The problem seems to be within your administration. Please review this matter and advise me promptly.*
>
> *Sincerely yours,*
> *Member*

"Health care management company" or "managed health care company" are the current descriptive terms used for companies who sell or administer health care plans such as Independent Practice Associations (IPAs) or Preferred Provider Organizations (PPOs). The great majority are for-profit organizations that claim competency in administering the delivery of health care to avoid waste, maintain quality, and contain cost. The correspondence is presented here because it addresses directly — even though anecdotally — the vagaries of the administrative process that now overshadow the practice of medicine. It should be noted that

* and ** See page 398

continued on page 396

Editor's Desk

continued from page 395

ANY-HCMCO could indeed be any health care management company.

Both as patient and as physician, this anecdotal event was disburbing. Consider the patient. A company that purports to being the manager of his health care informs him that medical services he received will not be paid for by the plan. No question was raised as to the validity or need for the services. Rather, the message to the patient is that he will be burdened with the cost of his care because administrative requirements were not met. There is an opportunity to appeal if there is disagreement with the company's pronouncement. As a patient, the first reaction was to determine what, if any, lapse in administrative protocol occurred, but as it turned out, all was in order. Care was sought and obtained through prescribed channels. Plan benefits included the care involved. The primary care physician and subspecialists also followed proper procedure. The problem here was neither with the patient nor his physicians, but with the administrator, the agent whose raison d'etre is competence in the management of the system. This patient, knowledgeable in how health care management companies operate, is likely to challenge successfully the claims denial. But, what happens to those many hapless patients who have little or no experience in these matters?

A look at ANY-HCMCO or any HCMCO shows how a typical claims processing unit operated. The great majority of claims are processed and paid with varying degrees of promptness. But the system also has a high level of sensitivity in rejecting claims. ANY-HCMCO disallowed the claim when they discovered they had no record of a primary care physician's referral authorization. They did so without inquiring whether or not such a referral request had been issued by the primary care physician. By rejecting the claim out of hand, they thrust upon the patient the onus to either pay or assume the role of claims processor, that is to estabish the validity of the claim, presumably the functions for which health care management companies are engaged. Many patients will question the decision and pursue the claim, but some will not as a result of naivete or confusion.

Consider the viewpoint of the physicians involved. At the request of the claimant, personnel in the primary care physician's office spent time searching for the record of referral; the business managers of the subspecialists did the same. Several phone calls were involved. Time was consumed. This could be just the first round. There may well be other correspondence. Involved physicians may be interrupted and queried. Records will be searched. Claim forms may be lost and found and lost again. All this is being added to the cost of health care in the name of administration, of efficacy and managment of "provider services."

Is this a rare and inconsequential event in the process of delivering managed health care? That is hardly the view of many practicing physicians who assure us that dealing with managed care copanies has become a stressful and harassing part of the daily functions of medical practice. That view is reinforced by the personnel of the physician's office who are constantly burdened with these episodes of claims processing. It does harm. With or without "clerical errors," the burden of administrative overlay imposed on the practice of medicine is repressive and pernicious.

Administrators as a component of health care delivery have shown the largest percent increase in numbers by far since 1970, almost 300% as compared to about 60% for physicians and about 85% for all other health care workers. Whatever service all those people perform, it includes exasperating disruption to the ongoing activities of the physician's office. It encroaches on the professional time and judgment of physicians. It causes stress and anxiety to patients.

If this is the unpleasant side of managed care, what are the benefits derived from this system? How has it helped? What are we saving? What price do we pay for managed health care? More specifically, just what is being managed? Emphasis on competition and good solid business management of health care delivery began in earnest in 1980 with the strong encouragement of the federal government and business coalitions across the country. Despite a notable lack of financial success, commercial managed health care plans encroached significantly on the dominant conventional fee-for-service sector. The major thrust of managed care was to constrain the enormous cost of health care. Its performance in that area has been without distinction. Between 1980 and 1988, the years for which data is available, the relative differences in the rise of the Consumer Price Index (CPI) and the Medical Cost Index (MCI) have not changed from the preceding decade. Has health care achieved higher quality? There is neither claim nor evidence for that. Has accessibility improved? The reverse has occurred. Since the rise of commercial managed care, the number of people in this country without health insurance has climbed to 37,000,000, which is 15% of the population.

There are many problems with the delivery of health care in the United States, and it is time that we as physicians examine our responsibility for some of those

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Auxiliary Message

by Carol Sparkman
MSMAA President

Solutions to the adolescent health crisis will only be found by developing individual and organizational leadership to carry out health education programs. It's that simple.

Auxiliary and AMA Congress on Adolescent Health

"The AMA Auxiliary has long been committed to improving the health of our nation's adolescents," Sandra Mitchell, AMA Health Projects Chairman, told participants at the AMA National Congress on Adolescent Health, May 10-12, 1990 at the Grand Hyatt Hotel in Washington, D.C. "Since 1988, when the AMA asked the Auxiliary to join in its adolescent health initiative, our state and county auxiliaries have developed thousands of health education programs and action projects that have reached hundreds of thousands of youth across the United States."

Mrs. Mitchell was one of two speakers at "Mobilizing Community Action," a workshop dealing with the role of volunteers in improving adolescent health. She outlined the variety of activities auxiliaries have undertaken for adolescents and discussed the importance of working in coalition with other organizations.

"Among auxiliary-sponsored programs," Mrs. Mitchell stated, "are health-related booklets and brochures, pocket-size self-help directories, and health fairs and workshops that teach teens how to make healthy choices.

"We have been able to support these diverse and vital activities because we have a ready-made pool of volunteers who believe in our cause," she said. "Our members are involved because they are committed to improving public health, and they are willing to dedicate their time and energy to programs that will achieve that end. That is one reason for our success. Another is that we often work in coalition with others.

"The Auxiliary serves as a catalyst and an organizing force. We don't pretend to be experts on drug addiction, AIDS, depression or teen suicide. But as members of the medical community, we know where to find those experts, and we know how to organize programs and projects that will expose teens to the information those experts have to share.

"We are committed to protecting the health of our children," Mrs. Mitchell concluded. "We want teens to know that they are responsible for their own health, because the choices they make today will affect their lives tomorrow."

The preceding information was taken from *The Direct Line*, May, 1990 edition, published by the American Medical Association Auxiliary. This article was one of the many programs presented at the Adolescent Health Congress. Other Congress highlights included the following items: release of the National Commission's Report on the role of the school and community in improving adolescent health; launch of the AMA's new anti-smoking initiative for children and youth; presentation of awards to more than 30 outstanding programs from around the country; discussion of the Year 2000 Health Objectives for the nation as they apply to adolescents; and participation in workshops and talks that provided opportunities for participants to meet the challenge of adolescent health issues at the state and local levels.

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Auxiliary Message

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Our nation is facing a crisis in adolescent health. What you read and hear about adolescent health is not always good. Every 78 minutes a youngster attempts suicide; almost half of all high school seniors have used an illegal drug at least once and almost 90% have used alcohol. A young girl becomes pregnant every 31 seconds and some 1.5 million children and adolescents turn up missing every year. Twenty-five percent of young girls are sexually victimized by the time they reach age 13. The list goes on.

Statistics such as these have aroused the concern of people all over the nation, among them — AMA Auxiliary members, who three years ago joined the AMA in its fight to improve the health of the nation's youth. Since then, auxiliary members have developed and implemented thousands of education programs and action projects aimed at teaching adolescents how to make wise health choices.

Solutions to this crisis will only be found by developing individual and organizational leadership to carry out health education programs that will help to make a difference in how teens conduct their lives. The anti-smoking campaign is one example. Since programs targeted to make teens aware of the risks of tobacco use began, there has been a decrease in the percentage of high school seniors who are regular smokers — from 28% in the 70s, to 20% in the 80s.

Education of our youth must continue. As Kathleen Jordan recently stated in the May, 1990 issue of *Facets*: "No other knowledge is more crucial than knowledge about health. Without it, no other life goal can be successfully achieved. Reason enough to continue efforts to educate youth about health so that, in time, the good news will be the only news when it comes to adolescent health."

Other auxilians attending the Congress from Missouri were Nona Chapman, Mary Hunkeler and Carol Sparkman. A re-run of this Congress will air on American Medical Television or the Discovery Channel on July 8, 1990 from 11:00 - 11:30 a.m.

Editor's Desk

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difficulties. We have a poor record of minding our own house. We as a profession have been slow to react to the growth in the cost and demand for health care that has mandated change in the delivery system. We have left the door open to pseudo-administrators who manage little more than the distribution of money that changes hands in the course of the health delivery process. That function deserves study to see if it has not created more cost than it saves. Financial risk, the protection helath insurance companies sell, has been thrust to large degree on physicians. Claims processing, unless incontrovertible, is unloaded on the patient for proof of payment.

What then has been accomplished in the last decade of managed health care? Health care management companies have stabilized and are beginning to show profits. They have increased premiums to the point where they now cover their administrative costs as well as the cost of health care. But there has been no measurable reduction in the cost of health care. Business coalitions across the country proclaim the need for good management in health care. They're right. We need good organizational structure in medicine that accommodates the best fit of access to care for patients, professional autonomy to practice high quality medicine, and reasonable compensation for those who deliver that care. We did not have that before the rise of commercial managed health care companies, and we are no closer to it now.

Physicians should be forming their own organizations that can be governed by physicians for the benefit of their patients and therefore for themselves. They should be developing methods of reimbursement that reflect a fair distribution of compensation for their professional efforts that do not require for payment the myriads of separate transactions administered by an army of clerks. Until they do, they can expect the heavy additional cost and annoyance of managed care administrative companies to continue.

---

* Any health care management company.

** Except for the omission of identification and a paragraph concerning Medicare patients from the first letter, they are complete.

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References
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2. *Br J Clin Pharmacol 1985;20:710-713.*
3. *Data on file, Lilly Research Laboratories.*
4. *Scand J Gastroenterol 1987;22(suppl 136):61-70.*
5. *Am J Gastroenterol 1989;84:769-774.*

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Carcinogenesis, Mutagenesis, Impairment of Fertility—A two-year oral carcinogenicity study in rats with doses as high as 500 mg/kg/day (about 80 times the recommended daily therapeutic dose) showed no evidence of a carcinogenic effect. There was a dose-related increase in the density of enterochromaffin-like (ECL) cells in the gastric oxyntic mucosa. In a two-year study in mice, there was no evidence of a carcinogenic effect in male mice, although hyperplastic nodules of the liver were increased in the high-dose males as compared with placebo. Female mice given the high dose of Axid (2,000 mg/kg/day, about 330 times the human dose) showed marginally statistically significant increases in hepatic carcinoma and hepatic nodular hyperplasia with no numerical increase seen in any of the other dose groups. The rate of hepatic carcinoma in the high-dose animals was within the historical control limits seen for the strain of mice used. The female mice were given a dose larger than the maximum tolerated dose, as indicated by excessive (30%) weight decrement as compared with concurrent controls and evidence of mild liver injury (transaminase elevations). The occurrence of a marginal finding at high dose only in animals given an excessive and somewhat hepatotoxic dose, with no evidence of a carcinogenic effect in rats, male mice, and female mice (given up to 360 mg/kg/day, about 60 times the human dose), and a negative mutagenicity battery are not considered evidence of a carcinogenic potential for Axid.

Axid was not mutagenic in a battery of tests performed to evaluate its potential genetic toxicity, including bacterial mutation tests, unscheduled DNA synthesis, sister chromatid exchange, mouse lymphoma assay, chromosome aberration tests, and a micronucleus test.

In a two-generation, perinatal and postnatal fertility study in rats, doses of nizatidine up to 650 mg/kg/day produced no adverse effects on the reproductive performance of parental animals or their progeny.

Pregnancy—Teratogenic Effects—Pregnancy Category C—Oral reproduction studies in rats at doses up to 300 times the human dose and in Dutch Belted rabbits at doses up to 55 times the human dose revealed no evidence of impaired fertility or teratogenic effect; but, at a dose equivalent to 300 times the human dose, treated rabbits had abortions, decreased number of live fetuses, and depressed fetal weights. On intravenous administration to pregnant New Zealand White rabbits, nizatidine at 20 mg/kg produced cardiac enlargement, coarctation of the aortic arch, and cutaneous edema in one fetus, and at 50 mg/kg, it produced ventricular anomaly, distended abdomen, spina bifida, hydrocephaly, and enlarged heart in one fetus. There are, however, no adequate and well-controlled studies in pregnant women. It is also not known whether nizatidine can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. Nizatidine should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers—Studies in lactating women have shown that 0.1% of an oral dose is secreted in human milk in proportion to plasma concentrations. Because of growth depression in pups reared by treated lactating rats, a decision should be made whether to discontinue nursing or the drug, taking into account the importance of the drug to the mother.

Pediatric Use—Safety and effectiveness in children have not been established.

Use in Elderly Patients—Healing rates in elderly patients were similar to those in younger age groups as were the rates of adverse events and laboratory test abnormalities. Age alone may not be an important factor in the disposition of nizatidine. Elderly patients may have reduced renal function.

Adverse Reactions: Clinical trials of varying durations included almost 5,000 patients. Among the more common adverse events in domestic placebo-controlled trials of over 1,900 nizatidine patients and over 1,300 on placebo, sweating (1% vs 0.2%), urticaria (0.5% vs <0.01%), and somnolence (2.4% vs 1.3%) were significantly more common with nizatidine. It was not possible to determine whether a variety of less common events was due to the drug.

Hepatic—Hepatocellular injury (elevated liver enzyme tests or alkaline phosphatase) possibly or probably related to nizatidine occurred in some patients. In some cases, there was marked elevation (>500 IU/L) in SGOT or SGPT and, in a single instance, SGPT was >2,000 IU/L. The incidence of elevated liver enzymes overall and elevations of up to three times the upper limit of normal, however, did not significantly differ from that in placebo patients. Hepatitis and jaundice have been reported. All abnormalities were reversible after discontinuation of Axid.

Cardiovascular—In clinical pharmacology studies, short episodes of asymptomatic ventricular tachycardia occurred in two individuals administered Axid and in three untreated subjects.

CNS—Rare cases of reversible mental confusion have been reported.

Endocrine—Clinical pharmacology studies and controlled clinical trials showed no evidence of antiandrogenic activity due to nizatidine. Impotence and decreased libido were reported with equal frequency by patients on nizatidine and those on placebo. Gynecomastia has been reported rarely.

Hematologic—Fatal thrombocytopenia was reported in a patient treated with nizatidine and another H_2-receptor antagonist. This patient had previously experienced thrombocytopenia while taking other drugs. Rare cases of thrombocytopenic purpura have been reported.

Integumental—Sweating and urticaria were reported significantly more frequently in nizatidine- than in placebo-treated patients. Rash and exfoliative dermatitis were also reported.

Hypersensitivity—As with other H_2-receptor antagonists, rare cases of anaphylaxis following nizatidine administration have been reported. Because cross-sensitivity among this class has been observed, H_2-receptor antagonists should not be administered to those with a history of hypersensitivity to these agents. Rare episodes of hypersensitivity reactions (eg, bronchospasm, laryngeal edema, rash, and eosinophilia) have been reported.

Other—Hyperuricemia unassociated with gout or nephrolithiasis was reported. Eosinophilia, fever, and nausea related to nizatidine have been reported.

Overdosage: Overdoses of Axid have been reported rarely. If overdosage occurs, activated charcoal, emesis, or lavage should be considered along with clinical monitoring and supportive therapy. Renal dialysis for four to six hours increased plasma clearance by approximately 84%.

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132nd Annual Convention

Missouri State Medical Association

Tan-Tar-A Resort
Lake of the Ozarks, Missouri
April 4-8, 1990

FIRST SESSION

The First Session of the MSMA House of Delegates was called to order at 10:00 a.m., Thursday, April 5, 1990 by Speaker of the House, Jo-Ellyn M. Ryall, M.D. The following officers and delegates were present during the 132nd Annual Meeting:

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MISSOURI STATE MEDICAL ASSOCIATION

MSMA President Marvin A. Singleton, M.D., presents the 1990 Citizenship and Community Service Award to Thomas R. Anderson, M.D., of Columbia, Missouri, at the First Session of the House of Delegates.

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Greene	James Shaeffer, *Springfield*
Greene	Ramon Shane, *Springfield*
Greene	Diana Spade, *Springfield*
Greene	Dan Sullivan, *Springfield*
Greene	Norman Wall, *Springfield*
Greene	Robert Zahn, *Springfield*
Jasper	Robert Brigden, *Joplin*
Jasper	Mark Cotner, *Joplin*
Jasper	William Crosby, *Joplin*
Jasper	Clarence Martin, *Joplin*
Jasper	Dale Rankin, *Joplin*
Jasper	Dennis Smith, *Joplin*
Jasper	Jack Vinyard, *Joplin*
Webster	T. M. Macdonnell, *Marshfield*

Ninth District

Mid-Missouri	Hugh Bartlett, *Rolla*
Mid-Missouri	Wes Stricker, *Rolla*
Ozarks	Paul B. Anderson, *Neosho*
South Central	L. G. Mayuga, *Cabool*
South Central	Thomas Stubbs, *West Plains*

Tenth District

Butler-Wayne-Ripley-Carter	James W. Gieselmann, *Poplar Bluff*
Butler-Wayne-Ripley-Carter	Gene Leroux, *Doniphan*
Butler-Wayne-Ripley-Carter	Ann L. Peick, *Poplar Bluff*
Cape Girardeau	J. M. Jung, *Cape Girardeau*
Cape Girardeau	Mark Kasten, *Cape Girardeau*
Cape Girardeau	Ed Masters, *Cape Girardeau*
Cape Girardeau	Scot D. Pringle, *Cape Girardeau*
Cape Girardeau	Tom Sparkman, *Cape Girardeau*
Cape Girardeau	Nancy Weber, *Cape Girardeau*
Cape Girardeau	Craig Williams, *Cape Girardeau*
Dunklin	Nicholas F. Robinson, *Kennett*
Jefferson	Michael Blank, *DeSoto*
Jefferson	Alfred D. Shaplin, *St. Louis*

Mineral Area	David Auner, *Ironton*
Mineral Area	H. D. Dierker, *Farmington*
Mineral Area	Edward H. Dumontier, *Farmington*
Mineral Area	R. A. Huckstep, *Farmington*
Quad	Kirby L. Turner, *Poplar Bluff*
SEMO	Greg Bowers, *Sikeston*
SEMO	Donald Cento, *Sikeston*
SEMO	Kenneth Dempsey, *Sikeston*
SEMO	Theodore Roberts, *Sikeston*

Delegates-At-Large

Jo-Ellyn M. Ryall, *St. Louis*, Speaker
James B. Wolfe, *Springfield*, Vice Speaker

Past-Presidents

Richard V. Bradley, *St. Louis*
T. J. Cooper, *St. Louis*
H. Peter Ekern, *Mexico*
Joseph L. Fisher, *St. Joseph*
Walter German, *Springfield*
E. T. Hansbrough, *Poplar Bluff*
Howard J. McAlhany, *Springfield*
Andrew McCanse, *North Kansas City*
E. A. Stricker, *Rolla*
Ronald A. Youmans, *Kansas City*

Student Delegates

Mark Cunningham, St. Louis University, *St. Louis*
Melissa Fogelman, St. Louis University, *St. Louis*
Robert Swanson, St. Louis University, *St. Louis*
Nancy Clore, University of Missouri, *Columbia*
James R. Allen, University of Missouri, *Kansas City*

Hospital Medical Staff Section

James C. Redington, *St. Louis*

Resident Physician Section

James R. Allen, *Kansas City*
Greg Hill, *Kansas City*
Chris Pittman, *St. Louis*

Coming in the August Directory Issue —

Patient Information Pages

Beginning in August, *Missouri Medicine* will feature a monthly **Patient Information** page. This page will contain practical and timely information on common ailments, injuries, diseases, and various medical topics. Each month you will be able to tear out the page, make copies and distribute them in your office. We think your patients will benefit from the information. Please let us know what you think about the feature. We want your input! We also welcome submissions and ideas.

MSMA President Marvin A. Singleton, M.D., gave the invocation. William Gondring, M.D., Chairman of the Committee on Credentials, reported that seven officers, 19 councilors and 84 delegates were present. The minutes from the 131st Annual Convention were approved as published in the July 1989 issue of *Missouri Medicine*.

Speaker Ryall announced the members of the various reference committees: Reference Committee A (Reference Committee on Constitution and Bylaws) — William Case (Chairman), David Auner, Joseph Corrado, Charles Johnson, and Clarence Martin; Reference Committee B (Reference Committee on Reports of Officers) — Meredith Payne (Chairman), James R. Allen, Michael Gentry, John L. Rolla, and Paul Rother; Reference Committee C (Reference Committee on Resolutions) — Michael C. Perry (Chairman), Kenneth Bruns, Mark Cunningham (medical student), Warren C. Lovinger, and Steven E. Buie.

Dr. Singleton then addressed the House and his remarks appear on page 412 of this issue. Speaker Jo-Ellyn Ryall then invited Dr. Gary A. Dyer, President-Elect to give his remarks. Vice Speaker James B. Wolfe introduced MSMA Auxiliary President Pattye Barbee, who addressed the House. Her remarks appear on page 414 of this issue.

Following her remarks, Mrs. Barbee asked Dr. Singleton to assist her in distributing the AMA-ERF checks to Missouri's four medical schools. Fred Defeo, M.D., accepted the checks for the University of Missouri-Kansas City School of Medicine. UMKC received $4,683.49 in designated contributions and $2,315.60 in undesignated contributions. Representing the Missouri University School of Medicine, Hugh Stephenson, M.D., accepted $5,507.47 in designated contributions and $6,214.99 in undesignated contributions. Manual Comas, M.D., of St. Louis University School of Medicine, accepted $16,014.65 in designated contributions and $9,305.85 in undesignated contributions. On behalf of Washington University School of Medicine, Fred Peterson, M.D., accepted $5.045.18 in designated contributions and $4,298.57 in undesignated contributions.

Next, Dr. Singleton invited Thomas R. Anderson to the podium to receive the 1990 Citizenship and Community Service Award. Dr. Anderson, a psychiatrist from Columbia, is a Missouri native and a 1961 graduate of the University of Missouri-Columbia School of Medicine. He completed his medical residency in psychiatry at the University of Missouri in 1967. He served his military obligation with the U.S. Public Health Service in Fort Worth from 1962 to 1964. In 1973, Dr. Anderson was elected to a two-year term as Mayor of the city of Columbia. During his tenure, the city established a youth advisory commission and opened up all of its committee meetings to the public. He was also largely responsible for the reactivation of the Columbia Human Rights Committee. Both Dr.

Anybody know that cowboy? New MSMA President Gary A. Dyer, M.D., and wife, Eileen, stop to talk with Michael Perry, M.D., at the Show-Me Country Social Fundraiser for AMA-ERF and MSMF.

Anderson and his wife, Mary Liz, have made significant contributions toward helping abused and neglected children in Boone County, including helping to start the Boone County Community Council on Prevention of Child Abuse and Neglect.

Dr. Anderson has worked with the juvenile court to establish Rainbow House, a non-governmental, community-sponsored home for abused and neglected children. In addition to making a substantial contribution toward the home's beginning, Dr. and Mrs. Anderson personally bought the home and leased it back to the Council until the Council was able financially to purchase it.

His other civic involvements include service with the Area II Division of Family Services Advisory Board, the Columbia Children's Resource Board, the Boone County Chapter of the Mental Health Association, Columbia Adult Education, the League of Women Voters, the Mayor's Task Force on Prevention of Alcohol and Drug Abuse, and the Parent Involvement and Education Committee. He was also one of five initial physicians who banded together to build Columbia Regional Hospital, which in turn brought in Charter Hospital.

Dr. Anderson has long been active in the First Baptist Church in Columbia, singing in the choir and serving as a deacon and committee member.

Dr. Singleton presented Dr. Anderson with a plaque, and Dr. Anderson addressed the MSMA House.

Following Dr. Anderson's remarks, Dr. Singleton introduced Joseph Painter, M.D., who is Vice Chairman of the AMA Board of Trustees. Dr. Painter is an internist from Houston, and he was first elected to the Board of Trustees of the AMA in 1984. He is a member of the Council on Long Range Planning and has been a delegate to the AMA House, first representing the Section on Internal Medicine and then the Texas Medical Association. Dr. Painter is a graduate of the University of Texas Medical Branch in Galveston and did his residency at the Hospital of the University of Pennsylvania. Dr. Painter addressed the MSMA House.

Following Dr. Painter's remarks, Vice Speaker Wolfe announced that the Reports of Officers, Committees and Commissions were referred as shown in the Delegates Handbook. He asked for supplemental reports. Dr. Fred Peterson then presented the Report of the Missouri Patient Care Review Foundation. Following his report, Dr. Marvin A. Singleton presented the MMPAC report to the MSMA House. Next, Richard Bradley, M.D., president of MOMEDICO, reported on the professional liability insurance company. During his remarks, Dr. Bradley asked Dr. Jack Croughan, medical director of the Physicians Health Program to come up and accept a $13,000 contribution check from MOMEDICO. John Christy, M.D., president of Risk Control Associates in Springfield, then presented a contribution check to Dr. Croughan on behalf of RCA. Speaker Ryall then announced that the Supplemental Report of the Council for their meeting held April 4 had been distributed to the House and would be referred to Reference Committee B.

Dr. Singleton then announced his appointments for the 1990 Committee on Nominations whose members are chosen from each Councilor District:

First District: Robert Schaaf, *Gower*
Second District: Ed Plowman, *Hannibal*
Third District: George Bohigian, *St. Louis*
Fourth District: Sam Farrell, *Washington*
Fifth District: Diane Brukardt, *Columbia*
Sixth District: Jerry Meyer, *Concordia*
Seventh District: William Case, *Kansas City*
Eighth District: Stanley Peterson, *Springfield*, Chairman
Ninth District: L.C. Mayuga, *Cabool*
Tenth District: Tom Sparkman, *Cape Girardeau*
Student Councilor: Nancy L. Clore, *Columbia*
Hospital Medical Staff Section: James Redington, *St. Louis*
Resident Physicians Section: Robert McQuillan, *Kansas City*

Speaker Ryall then announced that the House had some unfinished business from the 1989 meeting. **Resolution #35**, a late resolution from the 131st meeting had been tabled to the 1990 meeting. After a motion to refer **Resolution #35** to the MSMA Council was defeated, discussion on the resolution was opened. After lengthy discussion, the resolution was defeated: 61 for, 66 against.

Two late resolutions, each requiring a two-thirds majority to become official business, were introduced to the House under New Business. The first late resolution was introduced by William Gondring, M.D.,

Gary Dyer, M.D., presents a 1990 Legislative Award to Senator Stephen Sharp at the Second Session of the House.

and concerned hunting accidents and the uninsured shooters tax. It was approved for House business, numbered 48 and referred to Reference Committee A. The second late resolution, on Critical Incident Stress Debriefing, was introduced by J.C. Corvalan, M.D. It was also accepted as business of the House, numbered 49 and referred to Reference Committee C.

At the request of the Speaker, the House stood and observed a moment of silence for those MSMA members who had died since the 1989 Annual Meeting.

After Dr. Stanley Peterson requested a meeting of the Nominating Committee at 4:00 p.m., in the House and several other announcements were made, the First Session of the MSMA House of Delegates was adjourned.

SECOND SESSION

The Second Session of the MSMA House of Delegates was called to order by Speaker Ryall at 4:00 p.m., on Friday, April 6, 1990.

Dr. William Gondring gave the Credentials Committee Report, stating that seven officers, 19 Councilors and 210 Delegates were present and constituted a quorum.

Dr. Gary A. Dyer then presented the 1990 Legislative Awards to five members of the Misssouri General Assembly. Receiving special plaques of appreciation for their service on behalf of medicine were: Senator John T. Russell (33rd District), Senator Stephen Sharp (25th District), Representative Jerry W. Burch (124th District), Representative Jerry McBride (144th District), Representative Joseph Treadway (102nd District), and Representative Bonnie Sue Cooper (32nd District). (Rep. Cooper could not be in attendance at the annual meeting and received her plaque at the June 3, 1990 meeting of the MSMA Council.)

Following these presentations, Speaker Ryall invited Dr. Stanley Peterson to the podium. He presented the report of the Nominating Committee that proposed the following slate of officers for 1990-91:

President-Elect:	Dr. Dorothy D. Reister, *Kansas City*
Vice presidents:	Dr. Patrick B. Harr, *Maryville*
	Dr. J. Otto Lottes, *St. Louis*
	Dr. John P. Ferguson, *Springfield*
Speaker of the House:	Dr. Jo-Ellyn Ryall, *St. Louis*
Vice Speaker of the House:	Dr. James B. Wolfe, *Springfield*
AMA Delegates:	Dr. George Bohigian, *St. Louis*
	Dr. Walter German, *Springfield*
	Dr. Hugh Stephenson, *Columbia*
	Dr. Robert R. MacDonald, *St. Louis*
AMA Alternate Delegates:	Dr. Carl Strauss, *Kansas City*
	Dr. Robert Gibbons, *Overland Park, KS*
	Dr. William H. Huffaker, *St. Louis*
	Dr. Jack Kayes, *St. Louis*

Speaker Ryall then moved the House business to the Reports of the Reference Committees. Per request, the reference committee reports were heard in the order of Committee C, then A, then B.

Please note that House Actions on all resolutions appear in the section "Resolutions" on pages 430-436 in this issue.

Reference Committe C

Michael C. Perry, M.D., presented the report of Reference Committee C. The following items were placed on the Consent Calendar:

Report of Commission on Continuing Education and Health Manpower
Report of the Commission on Medical Economics, Third Party Medicine and Governmental Relations
Report of Commission on Medical-Legal Affairs
Resolution 13 Written Disclosure to Beneficiaries of Estimated Charges
Resolution 23 Misinformation —Medical Care Cost and Cost Increase
Resolution 27 Medicaid Uniform Coding System with Medicare
Resolution 28 Tobacco Tax for Medicaid
Resolution 31 Patient and Physician Right to Privately Contract for Health Care
Resolution 33 CPT 4 Code for Precertification
Resolution 36 Task Force on Drunken Driving
Resolution 45 Medicaid Claims Processing
Resolution 49 Critical Incident Stress Debriefing (CISD)

The Consent Calendar was adopted by the House.

The Committee then made recommendations on the following resolutions:

Resolution 4 Peer Review: Reviewer Accountability
Resolution 10 Emergency Care By HMOs
Resolution 16 PRO Review Allow for Telephone Discussions
Resolution 21 PRO Savings vs. HCFA Expenses
Resolution 25 Missouri Medicaid Priority Funding
Resolution 37 Recent Dramatic Increase in Employer-Provided Health Plan Costs
Resolution 38 Office Lab Tests
Resolution 40 Mandatory HIV Testing
Resolution 44 Missouri Medicaid Billing Codes
Resolution 47 Pre-existing Conditions as a Basis for Denial of Health Insurance

Reference Committee A

Dr. William Case, chairman of Reference Committee A, announced that his committee had placed the following item on the Consent Calendar:

Report of the Committee on Constitution and Bylaws

The Consent Calendar was adopted by the House. The Committee then made recommendations on the following resolutions:

Resolution 2 Medical Care for the Homeless and Indigent
Resolution 6 Protection of Personal Assets in Malpractice Judgments
Resolution 7 Reporting Only Paid Professional Liability Claims on Licensing Application
Resolution 8 License Applications for all Professional Registration Boards Require Reporting of Professional Liability Actions
Resolution 11 MSMA's Position on Expanding the Definition of 'Unprofessional Conduct'
Resolution 12 Loss of Enjoyment Damages
Resolution 15 MSMA Policy Statement on Risk Management and Professional Liability
Resolution 17 Continued Tort Reform
Resolution 20 Regulation of Private Utilization Review Organizations
Resolution 30 Medical Tort Reform Initiative Petition Fund
Resolution 32 MSMA Malpractice and Tort Reform Blue Ribbon Committee
Resolution 35 Profit by Referral — Real or Perceived?
Resolution 39 Registration of Private Utilization Review Agencies; Publication of Review Guidelines; Licensing of Reviewing Physicians
Resolution 42 Right to Forgo Life Support
Resolution 46 Assistance to the Board of Healing Arts by the Local Medical Society
Resolution 48 Hunting Accidents and Uninsured Shooters Tax

Reference Commitee B

Dr. Meredith Payne, chairman of Reference Committee B, stated the following items had been placed on the Consent Calendar:

Report of the President
Report of the MSMA Auxiliary
Report of the Committee on Legislative Affairs
Report of the Secretary
Report of the Treasurer — MSMA Financial Statement
Report of the Executive Vice President
Council Minutes, including Supplemental Report
Report of the Committee on Planning
Report of the Missouri State Medical Foundation, MSMF Financial Statement
Report of the Commission on Interspecialty Medicine
Report of the Commission on Public Affairs
Report of the Committee on Publications
Report of the Ad Hoc Committee on "Sunsetting"
Report of the Judicial Council
Report of the Physicians Health Committee

The Consent Calendar was adopted by the House. The Committee then made recommendations on the following resolutions:

Resolution 1 IV Chelating Agents
Resolution 3 Anabolic Steroids as Controlled Substances
Resolution 5 Opposition to Therapeutic Substitution of Pharmaceuticals
Resolution 9 More Socioeconomic and Political Issues be Published in *Missouri Medicine*
Resolution 14 Equal Treatment Under the Law
Resolution 18 Health Care Magazine for the Public, sponsored by the AMA
Resolution 19 AMA Auxiliary Liaison Appointed to the Board of Trustees, Council on Scientific Affairs, Medical Services and other approved councils and committees of the American Medical Association
Resolution 22 Increase Representation of Graduates of Foreign Medical Schools in MSMA
Resolution 24 Expiration of Prescription Drugs
Resolution 26 Physician and Spouse Voter Registration
Resolution 29 MSMA Position on Recycling
Resolution 34 Missouri Physicians Health Program
Resolution 41 Recycling
Resolution 43 JCAH Requiring Documentation of "Phychosocial Needs" in Every Medical Chart

Following the last report, Speaker Ryall asked for old and new business. Having no old or new business, the Second Session of the MSMA House of Delegates was adjourned.

THIRD SESSION

The Third Session of the MSMA House of Delegates was called to order by Speaker Ryall at 8:00 a.m., Sunday, April 8, 1990. The Report of the Committee on Credentials was presented by Dr. William Gondring who announced that seven officers, 18 Councilors and 135 Delegates were present. This represented a quorum and the report was adopted.

The first item on the agenda was the election of officers. These individuals were presented by the Nominating Committee at the Second Session (See page 405 for complete list) and the nominations were closed during that Session. The slate of officers for 1990-1991 was unanimously elected by the House. Dr. Reister, the new president-elect, briefly addressed the House.

Following Dr. Reister's remarks, Speaker Ryall asked Dr. William Huffaker to come to the podium. Dr. Huffaker offered a courtesy resolution commending J. Otto Lottes, M.D., for his 10 years of service as the Third District Councilor 1980-1990. Dr. Lottes then stepped to the podium where Dr. Huffaker presented him with a plaque.

Dr. Ryall then asked Dr. Norman Knowlton, MSMA Secretary, to give the Report of the Election of Councilors and Vice Councilors. These elections were held in the respective distict caucuses:

terson
Dr. Wol

William Huffaker, M.D., presents a plaque to J. Otto Lottes, M.D., at the Final Session of the House of Delegates commemorating his 10 years of service as the Third District Councilor 1980-1990.

First District
Stephen Vilmer, *Councilor*
Robert Schaaf, *Vice Councilor*

Third District
Dan O'Sullivan, *Councilor*
Frederick Peterson, *Councilor*
Meredith Payne, *Vice Councilor*

Fifth District
Jerry Murrell, *Councilor*
Ruth Kauffman, *Councilor*
Jerry Kennett, *Vice Councilor*

Seventh District
Robert Gibbons, *Councilor*
William Dorzab, *Councilor*
Steven Buie, *Councilor*
Linda Dorzab, *Vice Councilor*

Eighth District
Duane C. Hellam, *Councilor*

Ninth District
David Barbe, *Councilor*
Thomas Stubbs, *Vice Councilor*

Student Councilor District
Maria Evans, UMC, *Councilor*
Robert Swanson, WU, *Vice Councilor*

Hospital Medical Staff Section
Charles Barbee, *Councilor*
Paul Petruska, *Vice Councilor*

Resident Physicians Section
Donald Cole, *Councilor*
Chris Pittman, *Vice Councilor*

Speaker Ryall then called on Dr. Norman Knowlton, MSMA Secretary, to conduct the installation of officers.

Afterward, Dr. Gary A. Dyer announced his appointments of committees and commissions chairmen (please note that a complete listing of all MSMA standing committees and commissions will appear in the August Directory issue of *Missouri Medicine*).

Committee on Constitution and Bylaws
Brian Balfour, *St. Joseph*

Committee on Legislative Affairs
Jerry Murrell, *Columbia*

Physicians Health Committee
Carl Pearman, *Springfield*

Registration at the 132nd Annual MSMA Convention was fast and furious, as shown here during the first morning.

Committee on Planning
Phillip Hornbostel, *Sedalia*

Commission on Continuing Education and Health Manpower
John H. Renner, *Kansas City*

Commission on Medical Economics, Third Party Medicine and Governmental Relations
Ronald N. Riner, *St. Louis*

Commission on Medical-Legal Affairs
Joseph Corrado, *Mexico*

Commission on Public Affairs
Robert Wankum, *Jefferson City*

Publications Committee
Donald Sessions, *St. Louis*

Commission on Interspecialty Medicine
David P. Clark, *Columbia*

Judicial Council
Hugh Stephenson, Jr., *Columbia*, five-year term

Blue Ribbon Committee for Tort Reform:
Chairman, **Patrick B. Harr**, *Maryville* — First District
Michael K. Bukstein, *Hannibal* — Second District
Daniel F. O'Sullivan, *St. Louis* — Third District
Carl Hasik, *St. Peters* — Fourth District
Gerald Orth, *Columbia* — Fifth District
Phillip Hornbostel, *Sedalia* — Sixth District
Pierre Keitges, *Kansas City* — Seventh District
James R. Cook, *Springfield* — Eighth District
Barry J. Bass, *Rolla* — Ninth District
Michael C. Trueblood, *Cape Girardeau* — Tenth District
Ex Officio — MSMA Executive Committee

Speaker Ryall announced that the 133rd Annual Convention will be April 3-7, 1991 at Crown Center in Kansas City. The 134th Annual Convention will be held April 9-12, 1992 at the Adams Mark in St. Louis. The 1993 convention will be held at Tan-Tar-A Resort at Lake of the Ozarks, the 1994 Convention will be held in Kansas City, and an invitation was received to hold the 1995 convention in St. Louis.

The Speaker then adjourned the 132nd Annual Convention of the MSMA House of Delegates on April 8, 1990.

Editor's Note: Complete minutes for the 132nd Annual Convention are on file at the MSMA Office, 113 Madison, Jefferson City, MO. Any MSMA member interested in viewing the complete report may do so at the MSMA Office.

Concentrating on the business at hand, these Delegates to the 132nd Annual Convention of the Missouri State Medical Association took their task seriously.

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Presidential Inauguration Speech:

GARY A. DYER, M.D.

Dr. Singleton, Delegates, Honored Guests, Colleagues, Family and Friends, Ladies and Gentlemen: It is a great honor to be chosen the 133rd President of the Missouri State Medical Association (MSMA). I wish to thank you for allowing me that honor.

One hundred and thirty two presidents have preceded me, and I am sure that 132 and more will follow in the years to come, because the work goes on! The work of the Missouri State Medical Association is a continuum. It is carried out by physician volunteers with the assistance of an excellent MSMA staff.

In trying to develop a model to represent the MSMA, I first thought of a very thick cable, 132 – and soon to be 133 – years long. Each wire in the cable would represent one physician, each rope of wires a component society or section, and 50 ropes of wire twisted together, the MSMA as a whole. As lubrication is needed between the wires of a cable, proper lubrication is needed between the physician workers of MSMA. That lubrication is effective communication.

Each wire in a cable ends at some point and a new strand of wire is welded on. If the weld is good, the strength of the cable is unchanged. Each year, new members join MSMA. If each new member is properly briefed, trained, and educated, the weld to MSMA is good, and the strength of MSMA is unchanged or increased.

1990-1991 MSMA President Gary A. Dyer, M.D., left, and 1989-90 MSMA President Marvin A. Singleton, M.D., right.

Without lubrication a cable becomes brittle and cannot bend or flex in response to a changing, and at times, hostile environment. It may eventually fray or break. In the same way MSMA, without effective communication and consensus development, may fray and break in response to a changing, and at times, hostile medical environment.

The cable model is a good one, but I really wanted something a little more alive. Being a Missouri graduate and a big fan of our Missouri Tiger basketball team, I have decided that our association is best illustrated by a team concept.

The MSMA team is large, needs to be larger, and must include as many of the members as possible. The members of the team are of varying ages. New recruits are needed every year, because some graduate to honorary status or go to the hall of fame. A few become impaired or injured and go to the sidelines. A few just tire out. An occasional player gets fed up with medicine and leaves the team altogether.

Excellent coaching is provided by our staff. Every attempt is made to develop depth at every position. Depth is needed because the game is never-ending. In a sense the game is always being played in the first half. This year is the first half. The second half is played next year. The final score is never known. Right now the opposing teams appear to have the advantage.

The rules of the game are constantly changing. There are many referees and each has a different rule book. At times it seems our team is playing on more than one court at the same time.

On one court the referees (government functionaries) are also the opposing team. And at the same time, they are trying to make our patients feel that we are the opposition. On another court are the trial attorneys. They insist that we have a guaranteed supply of cash before the game starts, while they put up none. They want their field goals to be worth four points while ours are worth only two. If the game goes into overtime, they go to the Supreme Court to change the rules.

On still another court, the game is being called by the media. And you know what the media think of the Big Eight. They always want a winner from the East. In medicine this would be a winner such as they have in Massachusetts.

The government and third party payers now want scouts in our locker room or on our bench before and during the game. They want us to stall the ball and not take shots even when they are clearly wanted or needed.

This year I have asked that the interlude of music be eliminated to emphasize year-to-year MSMA continuity. Dr. Singleton is outgoing; I am incoming, but the mission and Strategic Plan of our association remain the same. The MSMA team, with a few changes, will still be in place and working hard! I do promise to be a team player, to support our mission and strategic plan, and will do my best to carry out my assigned duties.

The Council, led by its Chairman, Dr. Reister, and soon-to-be Chairman, Dr. Williams, has the responsibility for the bulk of the work of MSMA. In the honorary position of President, I will give the following six items special attention this year:

1. Promotion of physician and spouse voter registration.
2. Continued improvement in physician and spouse grassroots political action.

   — I will ask the MSMA Auxiliary to assist in carrying out the above two items.
3. Implementation of the Blue Ribbon and Tort Reform Committee.
4. Promotion of the MSMA Physician's Charity Care Program.
5. Exploring the possibility of MSMA expansion in Capitol Screening Programs.
6. Exploring the possibility of development of coalitions with the elderly.

It would not be possible for me to serve in this position if it were not for the support of family and friends. I would like to introduce some of them for you at this time:

First, my wife of 20 years, Eileen Dyer, a Past President of MSMA Auxiliary.

Next, our children: Jon Dyer, 17, a senior at Central High School in St. Joseph; Julie Ann Dyer, 14, a freshman at Central High; and Jared (J.T. or the Bear) Dyer, 9, a third grader at Noyes School.

Also, my mother, Violet Dyer of Stewartsville, Mo., and my sister, Karen Dyer of Independence, Mo., who is a teacher at Barstow Private School in Kansas City.

Add to the list Eileen's parents, Edward and Ethel Meehan of Webster Groves, Mo.; Eileen's brother, Jim Meehan and wife Margie from Fulton, Mo., and their son Daniel. Jim is an engineer at the Callaway Nuclear Power Plant; Eileen's sister, Marlene Breihan, and children Jessica, Katie and Billy, from St. Louis. Marlene's husband, Richard, could not be with us because of his work schedule; Margaret Piepergerdes, wife of the late Dr. Larry Piepergerdes of Lake Winnebago, Mo.; their son Grant and fiancee Sally Henderson. Grant is a freshman in medical school at MU in Columbia; their daughter, Amy Piepergerdes, who is a sophomore in veterinary medical school at MU; their daughter Ann attends William Jewell College and currently is studying in England. She could not be with us tonight.

Next, I would like for you to know Juris Doctor William Ely and Joy Ely of Blue Springs, Mo. Bill is an old friend from undergraduate school days, and is Circuit Judge in the 16th Judicial District; Juris Doctor Warren McElwain, his wife Judy, and daughters Laura and Michelle of Maysville, Mo. Warren is Associate Circuit Judge of DeKalb County and another very good friend; Dan and Susan Colgan, special friends of ours from St. Joseph. Dan is Associate Superintendent for Personnel in the St. Joseph Public School System. With them are their sons, Mark and Brent.

And now I would like to introduce "My Girls," the girls who keep my office running: Mary Sansone and husband Fred; Kit McCrary and husband Jack; and Una Dulcan and husband Dennis.

Physicians and spouses of Buchanan County have supported Eileen and me throughout the years. We wish to publicly express our thanks to all of them.

In conclusion, it is my sincere hope that all individual members, components, sections, and specialty societies will be team players. Through effective communication and consensus development, we can work together to strengthen the Missouri State Medical Association. We can work together to have meaningful input into political and legislative arenas in Missouri. And, most importantly, we can work together to improve medical care for our patients, and the citizens of this state.

Thank you.

■

President's Message:

MARVIN A. SINGLETON, M.D.

Dr Peterson
Dr. Wolfe
MISSOURI STATE MEDICAL ASSOCIATION
Dr Ryall
Dr. Painter

1989-90 MSMA President Marvin A. Singleton, M.D., addresses the First Session of the 132nd Annual House of Delegates.

I would like to take this opportunity to welcome the delegates and alternates and our guests to the 132nd Meeting of the House of Delegates of the Missouri State Medical Association.

This morning I'd like to talk about one subject. It is involvement and our commitment. As one of the youngest presidents at age 49, it was my honor to assume the presidency of this association. As it should be, half our membership is below the age of 40. I think there is a new wave coming to medicine. We have recognized that with our resident section and our student section.

This year we have addressed the issues of mandated medical acceptance of Medicare, global fee for obstetrical services, and a Task Force on Medicaid Fees, involvement in the process of the budget in the executive branch, testimony before the Silver Haired Legislature, advocacy days in the departments and the executive branches and before committees of the House and Senate.

Personally, I've traveled between 40,000 and 50,000 miles. I have spent at least 30 days away from my home. I have had the pleasure of meeting and talking with a large number of our membership. This has been at no cost to the Association other than the direct expenses: mileage, meals and motels.

I might take this opportunity to point out that none of your officers receives a salary or a per diem. In this regard, I believe it is time for the Association and its officers to move out into the state and reach our non-members.

Visitation to component societies is important, but it reaches our own members. We must go where the fish are if we're able to catch fish.

I think there is a need to stress the importance of going to hospital staff meetings, having booths at specialty society meetings, etc.

It has been a challenge for your officers to keep up with the tremendous travel pace that Walter German and the Association's officers started back four years ago.

Now we must go out and cast our nets among those who are non-members. I challenge the Association and those who follow, to address those people who are non-members and include them under the umbrella of organized medicine.

One of the pleasures of my commitment as your president was having been able to work with our staff in Jefferson City. Large credit goes to Mr. Royal Cooper.

I would ask now that Mr. Royal Cooper and all of our staff that work for us in Jefferson City, to stand and be acknowledged.

After nearly 15 years of close

association with Royal, he is still speaking to me, which I think, shows his tolerance and ability to work with all.

As your president, one of my major emphases has been participation. At this point I would like to discuss the title of my talk and that is "Involved or Committed."

It brings to mind the story of the chicken and the hog that I first heard down in the Ozarks. You may have heard me relate this one. The hog and the chicken were out strolling one day. It was a beautiful morning, the sun was shining, the weather was nice. The hills were beautiful — we all treasure the Ozarks.

The hog and the chicken were walking past a cafe. They looked in the window. The cafe had a special: "Eggs and bacon — 59 cents."

The hog looked at the chicken and said, "You know, that looks like a pretty good deal."

The chicken looked back at the hog and said, "You know, that's an excellent meal for that kind of price."

The chicken said, "Let's go in and partake of such a nice meal at such a nice price."

But the hog was a little reluctant. He looked at the chicken and he said, "You know, it's all right for you to rush in and say we need to have a nice meal at a nice cost, but you know, after all, you're only involved. We pigs are committed."

We in medicine are somewhat the same way. We look at costs. We look at nice meals. I now challenge you all in organized medicine to serve as role models. We need to do much better in this area.

I can relate this to my own community. For the past number of years, I have been active, hopefully, to a positive effect. Our next mayor of Joplin, Missouri, will probably be a spouse of a physician. A precinct committeeman in Newton County is a physician, in addition to myself.

The trustee of one of our local villages, Leewood, is a physician. I, myself, having had the privilege of being a state committeeman, am now one of three candidates for state senator replacing Senator Webster.

Role models, involvement, and commitment are questions you have to ask yourself in organized medicine, not only of physicians but of spouses as well. Ask yourself how many physicians, have represented the State of Missouri in the Senate in the last century.

Mr. Cooper, who perhaps, although he doesn't look his age, can remember back this century, has indeed told me that to his memory — and I left him leeway but he immediately said this century — that there has not been a physician in the Missouri State Senate.

What I've just related in fact shows commitment of physicians across this country. I again challenge you to participate.

As you know, there were 39 signers of the Declaration of Independence, four of whom were physicians. Where have we been in the last 200 years? Participation levels in the community have not persisted as they have in the past.

It's statistically been shown that for physicians who contribute and are at a high level in their communities, in those communities the malpractice incidents are less. It's a perception among the public that physicians care and demonstrate that caring.

It's not without its toll. It does take time. At times, I sort of feel like the Indian who sought help from the psychiatrist. He went to the psychiatrist and said, "I have a problem. It's a recurring dream. I have two dreams, actually. Sometimes I dream I'm a large wigwam. At times I dream I'm a small wigwam."

The psychiatrist, having self-assurance training, immediately looked at the Indian and said, "I know what your problem is. It's rather simple. You're two tents."

Participation in your community does take a toll. You may wake up with recurrent nightmares but it is positive. It's a benefit.

I now will leave this Association and its highest office with a challenge to the membership and that is: Become involved in critical decisions facing society by serving in positions of service to our fellow man.

Thank you again for the honor to have served you. I hope for a successful and productive annual meeting. God speed. ■

Auxiliary Report:

PATTYE BARBEE

Madam Speaker, Dr. Singleton, Dr. Painter, Delegates and Guests:

Sandy Mitchell
Pattye Barbee
Campbell
Linda Ritterbusch

MSMA Auxiliary President Pattye Barbee addresses the Auxiliary Delegation at the 1990 General Session.

Thank you for this opportunity to report on the activities of the Missouri State Medical Association Auxiliary.

I read a little story recently. Let me share it with you. At an art show a prospective buyer, who was admiring a particular watercolor, asked the artist how long it took him to paint it. The artist, a slow-talking Kentuckian, answered, "about 45 minutes." The buyer quickly exclaimed, "You want $300 for 45 minutes of work?" The artist, who had not quite finished his sentence, added, ". . . and 30 years."

The basic purpose of the Auxiliary is to support the physicians and the Association, and public relations is a large part of that. It sometimes entails reminding the public that special talents and skills do not develop overnight, that years of studying and training — along with an infinite number of hours of practice — are necessary to perfect a level of medical expertise. It sometimes warrants reminding the public that well-supervised hospitals, state-of-the-art technology, sophisticated equipment, and more effective pharmaceuticals required years of work and research before they came about. The members of the Auxiliary are some of your most effective spokespersons.

If the basic purpose of the Auxiliary is to **support** medicine, the highest purpose is to **enhance** medicine, to improve health and the quality of life for everyone. Auxilians have promoted and increased health education and health awareness; they have volunteered in activities that meet health needs; and they have supported health-related charitable endeavors. In doing so, they have made a positive impact toward preventive medicine.

I'll mention just a few highlights. In *St. Louis*, auxilians have supported and promoted the Youth Emergency Services Crisis Center; in *Kansas City*, a Target Awareness Program has been started, dealing with drug abuse and AIDS, using the experience and wisdom of retired physicians; in *Cole County*, the medical auxiliary worked in coalition with the osteopathic auxiliary, raising $12,000 for cancer research; *Clay-Platte County* prepared, printed, and distributed forms for parental/guardian "Consent to Treatment of a Minor" for child-care providers; *Cape Girardeau* raised $10,000 that was distributed to community projects; *Greene County* continues to staff and support its well-established Health Education Center; and *Boone County* is making progress toward its own Health Adventure Center. For the fifth year in a row, *Jasper County* held its successful Health Fair. In *Mountain Grove* and *South-Central County*, the Class of 2000 (second-graders now) are being educated to promote the smoke-free society; and, lest we forget that the givers of health care need nurturing too, *Buchanan County* held a day-long seminar on "Enhancing the Medical Marriage."

In recent years, the Auxiliary has also come to the forefront of the legislative arena. With an informed network and an active phone bank system in place, the members have been very effective in generating calls, letters and telegrams when a legislative alert is issued. A phone blitz was held last June when Expenditure Targets were in the House Ways and Means Committee and again in July when members of the Senate Finance Committee were contacted. Similar efforts have been made on Medicare issues, tort reform and the catastrophic drug bill. The AMA has credited the Auxiliary's contributions for its success in many of the amendments accepted by the committees.

In Missouri, auxilians stay informed and monitor the many bills that may effect medical care. Each year a time is set aside for a "Day at the Legislature," during which Auxiliary members visit the Capitol and invite their legislators to lunch to become better acquainted and to discuss informally their concerns. This year the day was March 7, and in spite of the unfortunate conflict with Senator Richard Webster's funeral, contact was made early in the day with many senators and representatives. Those who were able to attend the lunch were relaxed and receptive to conversation. The legislators have learned that auxilians comprise a group to be reckoned with as they are knowledgeable and articulate.

The fundraising efforts of the Auxiliary for medical schools are on-going. There is an old Chinese saying that each generation builds a road for the next generation. The road to and through medicine was well built for us, and it is incumbant upon us to build our road for the next generation.

Unfortunately, it is a "tollway." It requires constant funding for research projects, quality faculty, library materials, equipment, supplies and basic operating costs. In addition, with annual tuition ranging from $7,000 to $18,000 annually, many medical students need funds to help them meet their expenses. The American Association of Medical Colleges has estimated that the average debt of a medical student is now $45,000. Although the general public is generous toward certain health problems —cancer, heart disease, birth defects —contributions for medical schools call heavily on the medical community, i.e. alumni, family and friends.

To this end, the AMA established the Education and Research Foundation in 1950. It has distributed more than $48 million in funds to medical schools, guaranteed more than $95 million in loans to 40,000 medical students, and supported numerous research projects. In 1960, Missouri established the Missouri State Medical Foundation to aid Missouri students attending any accredited medical school in the United States.

The MSMA Auxiliary has raised more than $17,000 so far this year for AMA-ERF and almost $5,000 for MSMF, and we are not finished. I would like to invite you to join us this evening at 7:00 p.m., for the SHOW-ME COUNTRY SOCIAL, an evening of fun and fundraising. You will find in your packets an informational flier and a form for your contribution. For a donation of $50 per person, you can have dinner, dancing and entertainment, plus know that your money is helping to sustain excellence in medicine. Jerry Reed, the country western singer and comedian from the "Smokey and the Bandit" movies, will provide entertainment.

Total gifts to AMA-ERF across the country total more than $2 million each year, and auxiliary members in Missouri are proud to be a part of the efforts.

For auxilians who work year-round in dozens of different projects to solicit these funds, and for the medical students who benefit from them, I thank all of you for your generous support.

And now, a final word. Many of you have a spouse who is an auxilian; you very likely know what we are about. Some of you, however, have a spouse who is not a member of the Auxiliary. I believe that we are a professional organization of purpose, substance and charity. If you find merit in the health, legislative and charitable endeavors I have described today; if you see that what we do is valuable for the health of our communities, for the image of medicine and for the future of medicine, I hope you will encourage your spouse to join us.

Thank you for your time and interest. May I express my appreciation to the leadership of the Association, to the Council, and to the staff for their guidance and support this year. I have enjoyed the opportunity to work together for medicine.

On behalf of the MSMA Auxiliary, I wish you a successful, productive and gratifying 132nd Annual Meeting. ■

Inauguration Guest Speaker:

ROBERT PRIDDY

Let's go back to a July morning a little over a century ago. A group of men gathered in the Governor's office in the old Capitol — the one that burned in 1911 — to organize a new and influential state agency. The board's office established soon after, had one desk and four chairs; a case of drawers and another of pigeon holes and shelves; a pair of scales; a carpet and a coal-burning stove. One seal and one ink stand were used to fill out one register book of physicians and surgeons in Missouri, another register book of midwives, a case book, a minute book and a receipt book.

This was the beginning of the state board of health, 60 years after Missouri had become a state. Would that our bureacracy today were so simple.

As spartan as its beginnings were, things were to get worse for the new agency. Just two years later, the legislature failed to appropriate any money, not even enough to pay the rent. The board moved to St. Louis.

It was a time of great awakening in public health service.

It was still a time — as it had been for decades — when life was short, when turpentine and mustard plasters, assafoedita bags, cod liver oil and elixirs sold in brown bottles from the backs of rattling wagons were considered restoratives and cures. Good health was just a few swallows away.

We have made some progress. But too many people still find relief just a swallow away.

It was a time, a century ago, when the medical profession had dirty hands, when the newspapers aided and abetted quackery with astounding claims in boldly printed ads:

"They go to the Right Spot! Instant Relief! Stop Your Cough! Purify Your Breath! Strengthen Your Voice! Spalding's Throat Confections are . . . Good for the Clergyman; Good for Lecturers; Good for Public Speakers; Good for Singers; Good for Consumptives."

Or from the *Richmond Northwest Conservator:*

"Scrofula, or King's Evil, is a constitutional disease, a corruption of the blood by which this fluid becomes vitiated, weak and poor. Being in the circulation, it pervades the whole body, and may burst out in disease on any part of it. No organ is free from its attacks, nor is there one which it may not destroy. The scrofulous taint is variously caused by mercurial diseases, low living, disordered or unhealthy food, impure air, filth and filthy habits, the depressing vices and above all, by the venereal infection. Whatever be its origin, it's hereditary in the constitution, descending from the parents to children unto the third and fourth generations, indeed it seems to be the rod of him who says, 'I will visit the iniquities of the fathers upon their children.'

Its effects commence by disposition from the blood of corrupt or ulcerous matter, which in the lungs, liver and internal organs is termed tubercles; in the glands, swelling; and on the surface, eruption or sores.

One quarter of all people are scrofulous; their persons are invaded by this lurking infection and their health is undermined by it. To cleanse it from the system, we must renovate the blood by an alternative medicine and invigorate it by healthy food and exercise. Such medicine we supply in Ayers' Compound Extract of Sarsparilla."

And there were testimonials. These things worked!

But "Beware," warned one ad. "Beware of certain lying quacks who in imitation of my advertisement, style themselves regularly educated and legitimately qualified physicians."

If you were a wretch and had five dollars, Dr. Zane's antidote for strong drink could cure your alcholism, or your social condition would improve if you used "Veneral Powders, warranted sure cure."

In the 80 years before the first state board of health was formed, many doctors had treated the ailments of Missourians. Mixed among the quacks were men of great character who — through sometimes eccentric — performed valuable services to mankind here.

William Beaumont, the great doctor whose experiments in the early 19th century finally defined the process of digestion, was a Missourian for many years.

Joseph Nash McDowell, founder of a historic medical school in St. Louis, an eight-story, eight-sided building with walls eight feet thick, was one of the first to use cadavers in research (he pretended to be one one night and escaped harm at the hands of the brothers of a young girl whose body he had snatched). He believed bodies were best preserved if suspended from the roofs of caves.

Lewis Field Linn, who saved the life of Henry Clay's son, is best known not as a doctor, but as Missouri's model senator — the only one ever elected unanimously, the Father of Oregon.

Andrew Taylor Still's career crossed over into this century. Branded a quack by many for years, today Still is considered the founder of an important healing art.

And there's John Sappington of Arrow Rock, an extraordinary man whose little anti-fever pills saved thousands of Missourians from the misery of malaria in the mid-19th century; who, after making his fortune, wrote a little book that gave his secret to the world, the first medical book published west of the Mississippi River. In it was the formula for his little pills — one grain of quinine, three-quarters grain of licorice, one quarter grain of myrrh, and oil of sassafras. Take one every two hours until the fever breaks.

He was a pioneer in Missouri medicine who nonetheless believed fevers and illnesses could be conquered by bloodletting and what he called "puking and purging, or by the use of nauseating medicines, and sometimes by all of these means combined, as indispensably necessary for the cure of fevers."

Dr. Antoine Francois Saugrain, a doctor and scientist who died before this was a state, provided the medicines for Lewis and Clark, and also scraped the mercury off the back of his wife's best mirror brought all the way from France, to make thermometers for them.

And on into this century, Missouri has given this nation great men and women of healing.

They helped Missourians survive malaria, helped treat the deadliest of frontier diseases — cholera and smallpox, which wiped out entire families and on several occasions destroyed entire villages of Indians when brought upstream on the Missouri by white men.

Great Missouri doctors helped bring Missouri to its state of health today.

In the early years of our state, patent medicines sometimes more deadly than the infirmities they were meant to cure were so readily grasped by a public well aware of its limited chances for a long life, a few doctors shone through. Midwives and nurses before there were recognized nurses did things in good faith that would bring multi-million dollar malpractice suits today.

One hundred fifty years ago, there were tears, and a shrug of the shoulders. People seemed to know that if you had done all you could do, all you knew how to do, life went on for others.

Today, we know so much more, and perhaps the health profession in many ways has become a victim of its own success, so good that best efforts are often not enough, and tears and an understanding that one has done all that could be done is sometimes not enough.

A century ago there was hope. Today there is certainty. A hundred years ago when hope failed, there was resignation and ultimately an understanding that life is for the living.

Today when there is a failure of the perceived certainty of healing, there often is no understanding that best efforts are sometimes not good enough. Where once there was new hope to be found, today there is often hostility and anger. It is called progress.

Jack O'Connor, who grew up in the horse and buggy days, wrote, "My sister Helen and I had all the children's diseases known to man. For a woman with practically no income and with dwindling capital, the drug and doctor bills must have been staggering. We went through measles, whooping cough, scarlet fever, chicken pox, all varieties of colds and whatnot. We were inoculated against diphtheria and suffered horribly from hives, only to come down with the disease exactly three months after we were inoculated. When my sister and I were sick, we were purged, given enemas, and the moment I had as much as a sniffle, my mother started giving me 'a good cleaning out.' Luckily, my sister and I had strong constitutions or the cascara, epson salts, calomel and castor oil we downed would have killed us.

"Doctor Moeur — like many small town doctors — took pride in being a character. He was bluff, profane, ribald, and everybody loved him. He had taken the full two-year course at the University of Arkansas Medical School, but by today's standards he wouldn't even be a good horse doctor. He removed my adenoids by simply painting my throat with some

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Guest Speaker - Inaugural

continued from page 417

mildly anesthetic solution, promising me a dime for an ice-cream soda if I didn't howl too loud, putting a knee against my chest and his left arm around my head to hold me immobile, and then cutting out the growth with a scalpel in his free right hand. But he had a fine bedside manner..."

A hundred years ago you could go into a drug store and the town doctor — who often had his office in the back room — could sell you "Balm of Childhood," an agreeable and pleasant remedy, or "Ayer's Cathartic Pills," or "Hostetter's Celebrated Stomach Bitters," or "Doctor B.P. Sherman's Pricklyash Bitters," recommended for disorders of the stomach, liver and bowels — it had 27% alcohol. Or you could get a box of "Dr. John Bull's Vegetable Worm Destroyer," recommended as a safe and effective worm expeller from the human system.

By the way, Hostetter's Stomach Bitters were 50 proof. Even if you weren't cured, you apparently didn't care.

Sick headaches could be cured by Carter's Little Liver Pills. And if they weren't, well, that was life.

What of today?

Let's look at some of our finest supermarket newspapers:

The Globe, for April 10, 1990: Headlines and ads reading:

- At last: Relief for Women. End PMS agony with Mayor Clinic Plan.
- Gulp! 965,000 Americans drink Coke for breakfast every day. (The article also contained notes about other nutritious things we do — all taken from the book *On An Average Day.)*
- I Lost Over 100 Pounds . . . Without Dieting
- Arthritis Pain Relieved By No-Cost Natural Product
- Anti-mayonnaise group is Spreading the Word
- Free Cellulite Cream (Beautifies, Smoothes & Reduces the Appearance of Cellulite. Yours FREE Just for Calling Now . . .)
- "I Lost 42 Pounds Fast! Eating 5 and 6 Meals a Day of All My Favorite Foods!!"

And then there's this one:

- "Limited Time Offer. Tablets or Oral Liquid. FREE GH3. Receive Absolutely Free One Month Supply of GH3 for each 3 month supply purchased. Call TOLL FREE for prices or free information . . . the authentic formula from the company you can trust."

Any of you ever heard of GH3? Do you know what it's supposed to be used for? It doesn't say in the ad. But it's an authentic formula from the company you can trust.

So the quest continues despite the creation of antiseptic medicine, transplants and replacements, vaccines and antibiotics, hospitals in which your chances are better off getting out healthy.

What do we still promise ourselves? Not stomach bitters or work expellers. But it is suggested we can still grow hair on billiard balls. We can lose weight without reducing eating. We can elimimate fat by smoothing on a cream.

Our busts can be enlarged . . . well, some of our busts can be enlarged. I guess that's progress too.

The year-in-year-out, best-selling books are the fad diet of the year and the Good Housekeeping cookbook.

Progress.

Well, the facade is, despite the century of sameness in health gimmicks, fads and promised cure-alls, our health is better.

A century ago, when some of these ads were even more popular and even more followed than today, the average lifespan was 43 years.

Think of that. Had I been alive a century ago, I might be dead by now, assuming I had made it through birth and childhood.

Now, if I'm average, I have another 30 to 35 years left, a third of a century.

Think what you people in the medical profession have given to society at large. An extra three decades of creating great paintings, great writing, of searching for new cures, new hope, new peace, of making a difference in so many ways.

The people in the medical profession can measure their success in so may ways, and with so many intangibles.

But people like me can measure them in deeply personal ways too.

Thirty years. A 30-year increase in the last 100. An additional year of life for every three years that has passed.

My children are 19 and 16 years old.

I never met my father's father. He died three years before I was born.

My children never met their father's father, who died one and four years, before they were born.

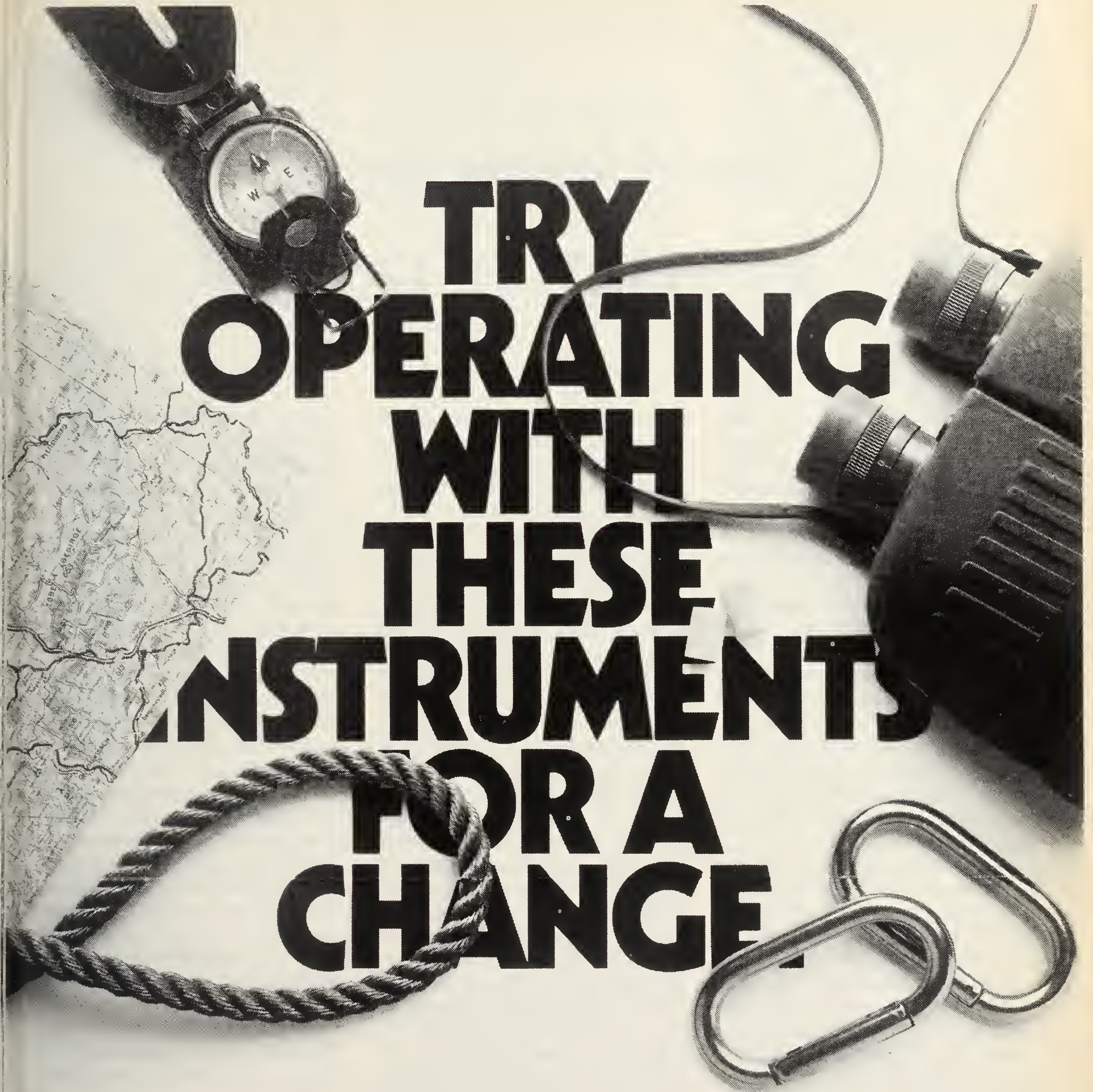
But thanks to the work you people do, have done, and will continue to do, I fully expect to become the first Robert Priddy in three generations to know the joy of holding his grandchild.

And that, my friends is progress. That is making a difference.

I thank you for it, for the success that is the product of patience and determination, of caring, of working.

Dr. Dyer, I wish you and the Missouri State Medical Association a fruitful year of success, of caring and continuing to make a difference.

■



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ARMY RESERVE MEDICINE. BE ALL YOU CAN BE.

General Session Speaker:

RICHARD D. LAMM

Let me begin with a parable: An Admiral in the U.S. Navy was on the high seas and suddenly a blip shows up on the radar screen. The Admiral tells the Ensign, "Tell that ship to change its course 15 degrees." The word came back on the radio, "You change your course 15 degrees." The Admiral said, "Tell that ship we're the U.S. Navy and to change its course 15 degrees." The word came back on the radio, "You change your course 15 degrees." The Admiral got on the radio and said, "I am an Admiral in the U.S. Navy. Change your course 15 degrees." The word came back, "You change your course 15 degrees — I am a lighthouse."

I call this a parable because it reflects my views that we are sailing into a new and much more volatile world of public policy. Specifically, we are heading for shoals. I believe we can navigate around them, and can change course: but unless we change course in some important areas, we will crash into the future.

Let me describe for you the new world of public policy into which I believe we are sailing. There have been four major revolutions in the last 20 years that will permanently change U.S. public policy.

1. We have gone from a continental economy to an international economy. New York used to compete with New Jersey, Pennsylvania and Illinois. Today it competes with Japan, Korea, Singapore, and West Germany. We have not fully explored or understood the implications of living in an international economy.

2. Public policy makers no longer have a rapidly growing pie to solve all our problems. It was marvelous to be a politician in the 1960s, because U.S. productivity was the highest in the world, and U.S. wealth doubled every 20 years. Today the United States has the lowest productivity rate in the industrial world and it takes more than 100 years to double U.S. wealth. The average U.S. family, adjusted for inflation, makes less money in 1987 than in 1973. Public policy no longer has an expansive "growth dividend" to solve public policy problems. We no longer have the wherewithal to be indiscriminately generous. We must understand, as one economist once told me, "capital is the stored flexibility we have to build our children a better future." How we spend that limited capital will dictate what kind of lives we leave our children.

3. America is aging fast. Since 1900 the population of the United States has increased three times, the population of those over 65 has increased eight times, and the population of those over 85 has increased 21 times. By the year 2050 there will be as many people over the age of 80 as are today over the age of 65. Between 1986 and 2040 the population age 65 to 74 will grow by about 85% while the population age 80 and over will grow by about 300% to 400%, and the population 90 and over will grow by an astounding 500% to 700%. We must better assess and more candidly discuss the implications of this demographic earthquake.

4. There is a revolution of medical technology. We now have people working on transplants or artificial organs (or both)for every organ of your body. There has been an explosion of new treatments, techniques, and procedures. We can now keep a corpse alive. The miracles of modern medicine are clearly outpacing the public's ability to pay for them. Infinite medical needs, especially for the elderly, have run into finite resources.

All of these together create a new world of public policy. America consumes more than it produces and spends far more than it earns. Our politicians spend far more than the income generated by taxes, and infinite demands have run smack into finite resources.

We must adjust ourselves to this new world of public policy. This requires a change in our thinking and our public policy.

I have another parable. When I was at Dartmouth last winter I heard the story of the professor who always gave his class the same exam.

Year after year, the same questions would show up on his examinations. His colleagues, shocked by this breach of professionalism went to him and said: "You can't always give the same examination!" He looked at them sagaciously and said, "You don't understand: every year I expect different answers."

The public policy kaleidoscope is forever turning, presenting us with a new pattern. We must be sensitive to those changed circumstances. If I could leave anything carved over the capitol in Denver, it would be "Beware of solutions which were appropriate to the past but are disastrous to the future." There is an old hymn out of my youth which goes: "*New occasions teach new duties, Time makes ancient good uncouth.*"

We must adjust our public policy to meet the new realities we face. We must do it for our children's sake. Dietrick Bonhoeffer said during his fight with Hitler: "*The ultimate test for a moral person is how the coming generation will live.*" I would like to use that ethical theme and give you a list of considerations I think are important to the new world of public policy into which I see us sailing.

This brings us to Copernicus. Copernicus made his contribution to history by asking the right question. He asked, "Perhaps instead of the sun going around the earth, does the earth go around the sun?" In that spirit I ask:

First: Instead of society adjusting itself to rising health care costs, doesn't health care have to adjust itself to society's limited resources?

Just as man can't live by bread alone, a society can't live by health care alone. But that's exactly where we almost seem to be going in the United States. We have other desperately important functions in which we have to invest to leave the kind of world we want to leave for our children and grandchildren. We must invest in education, infrastructure, and retooling America. Where are we going to get the jobs for our kids? Yet our whole system is tilting toward health care and toward the military.

When I entered high school in 1950, health care was 45.9 percent of what our society spent on education. This last year it was more than 100%. In 1950, we spent $1 billion a month on health care — in 1986, it's well over $1 billion a day. We have many important things to do with our limited societal resources. Health care is one of them, no question. But it isn't the only one. Yet it is the one we seem to give such precedence to, that it almost dominates all the others. One of the governors calls health care the "PAC MAN of his budget." If you want to build up a great university, you want to build up your infrastructure; you want to help retool your industries — here comes PAC MAN, coming through your budget, eating up your flexibility. In my opinion, like the fading southern family in William Faulkner's novel, who takes sick and ceases to work, we are treating our illness at the expense of our livelihood.

We spend more than $1,000,000,000 a day for health care, but our bridges are falling down, our teachers are underpaid, our industrial plants are rusty. This can't continue. There is something fundamentally unsustainable about a society that moves its basic value-producing industries offshore, yet continues to manufacture artificial hearts onshore. We have money to give smokers heart transplants, but no money to retool our steel mills.

We train more doctors and lawyers than we need, and fewer teachers. On any given day, 30%-40% of the hospital beds in America are empty, but our school rooms are overcrowded, and our transportation systems are deteriorating. We are great at treating sick people, but we are not great at treating a sick economy.

We are not succeeding in international trade. In the last six years we have imported half a trillion more goods from abroad than we have sold abroad. When you look around and try to assess in what industries the United States are succeeding, you'll see there are very few.

I believe one of the challenges of America's future is how to wisely invest our scarce resources. We must be realistic, we must ask heretical questions, and we must question sacred cows. We can't stand back and let one segment of our economy, no matter which one it is, dominate all others. When you look at where America is spending its resources, you soon get to health care.

Dr. Phil Caper, who with Dr. Jack Wennberg, is doing some very creative thinking in the health care area says: " Despite the doubling of resources devoted to medical care over the past two decades, we are hard pressed to point to specific improvements in the health status of Americans sufficient to justify such a massive transfer of wealth from other sectors of the economy."

Like the man who carries a first aid kit, the weight of which gives him blisters — which is why he's carrying the first aid kit in the first place — in my opinion, our health care system has become part solution, part problem. We wouldn't want to be without it, but it has become a heavy burden. It is definitely interfering with the public's ability to invest in our public goods, and with private industry's ability to retool itself. Health care insurance now costs U.S. corporations approximately $125 billion per year, which is 50% of their pre-tax profits. That's money desperately needed elsewhere. The 10% of the price of an American automobile that represents health care, (and that is rising 2½ times the rate of inflation), is rapidly making our goods less competitive in the international marketplace.

If we want an efficient and successful society, we must examine

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closely every institution in America, but especially health care. It's the Willie Sutton theory of bank robbery. When asked why he robbed banks, Willie replied: "That's where the money is." That's true today about health care.

Second: Who buys more health for society — doctors, sewage disposal plant workers, or public health workers?

When you start looking at how you buy health for a society, you do not start with doctors and hospitals. With due respect to doctors and hospitals, which are immensely important, when you look realistically at public policy, there is little correlation between how much money is spent on doctors and hospitals and how healthy is society.

We are too easily seduced into thinking that health care means doctors and hospitals, when actually the great advances in health care have been made in sanitation, pasteurization, chlorination, antibiotics and refrigeration. Screen windows to keep out mosquitos were an incredible forward advance of health. Public health officials have saved more lives than hospitals.

If we look at how we can improve the health of the average American, we find a similar figure. The greatest causes of premature mortality — not of total morality — are very simple: smoking, drinking too much, eating the wrong things and not wearing a seat belt. If you really want to know how to get America healthy, you start attacking those things. Those are four things an individual has under his control, and three of them are things we do with our mouth. The mouth is the most dangerous organ in the body. Nutrition, exercise, environment, worksite risks — all of these could bring more cost effective health to America than many of our current medical procedures.

We should never have allowed doctors and hospitals to become synonymous with "health care." Like Smuckers jelly, we assume because it was called "health care" it had to be good. The researchers tell us the factors in avoiding premature death and disease are: life style — 50%, environment — 20%, human biology — 20%, and that inadequacies in the health care system are only 10%. We have allowed the professions that make the most tangential contributions to appropriate the name. We must be very careful what we call something. I remember in "Rocky" When Sylvester Stallone won the boxing title and with it a great deal of money. People in his entourage were suggesting how he invest the money. "Stocks and bonds" yelled one, "real estate" cried another, "condominiums" cried a thrid. At which point Rocky looked at the man making the "condominium" suggestion and said "Naw, I never use them. I'm Catholic."

We must avoid a similar confusion. It becomes clear that there are many paths to health, and certainly doctors and hospitals are one of them. I would rather have a dollar a pack tax on cigarettes than I would another $100 billion put into the health care arena. Every day in America, smoking kills the same number of people as a 747 crash. Three hundred sixty thousand people a year die from cigarettes. So when you look at the kind of alternatives available — you give me some of those empty hospital beds to lock up drunk drivers, and I'll save more lives than hospitals. A mandatory seat belt law would probably save more lives than all the CAT scans in America.

America has to look at what we are getting for our money. The United States spends $2,000 per capita on health care, Great Britain spends $500 per capita on health care, Singapore spends $200 per capita on health care, yet we all have the same mortality and morbidity rates. How can anyone justify this discrepancy? You asked for cost-conscience politicians. How can the political system allow the recent dramatic increases in health costs, when other nations provide full medical care to all their people and at a fraction of the per-capita cost as we do in the United States, and they still have comparable health statistics? You're going to say that doesn't include cataract operations and hip replacements, and you're right. But again, mortality and morbidity rates are an immensely important yardstick and, I think it's very important. There is an inverse correlation in our industrialized world between how many doctors you have and how healthy your society. West Germany has the largest number of doctors per capita; they've got the worst health statistics. Japan has the least number of doctors per capita; they're the healthiest. Society has to look objectively and ask how to get the most bang for our buck.

We are not as healthy as some countries that spend one-eighth what we spend. Health care is a black hole of public policy into which you can pour infinite assets and often get only marginal returns. We have given health providers the highest social status in our society; we have made medicine the highest paid profession in America; we have made running a hospital one of the most profitable sectors of the economy; and we have given that system 11 cents out of every dollar spent in America. Yet if you're an American male you're only 15th in world life expectancy and if you're a female you're 8th in world life expectancy.

I am reminded of Jack Kent Cook, owner of the Washington Redskins. When asked why he fired his football coach George Allen: "I gave him an unlimited budget and he exceeded it." That's how I feel about health care.

Third: Don't we have to inevitably ration medicine?

We are not wealthy enough to base our health care system on the assumptions that we can give everything our genius has invented to all of the people out there. I believe clearly that the United States must ration medicine. We deny it and, as Linus, in Peanuts says, "There's no issue too big you can't run away from it," but clearly we already live in a society that rations medicine.

But the genius of medicine has outpaced America's ability to pay. No society anywhere in the world, has figured out how not to ration health care. We must be open about the values and stakes involved. The Painful Prescription tells us that. Rudolf Klein, a very thoughtful observer from England says, "Rationing is inherent under any health care system." A quote from the Oregon Health Decisions says:

"We cannot live under the idea that we can give everybody all the health care that they need. Rationing of health care is inevitable because society cannot or will not pay for all of the services modern medicine can provide. People in this state must search their hearts and their pocketbooks and decide what level of health care can be guaranteed to the poor, the unemployed, the elderly and others who depend on publicly funded health services."

They point out that we already ration medicine. We ration it chronologically, economically, geographically, politically, scientifically, etc. Thirty-three million Americans lacked hospital insurance in 1982, and perhaps another 16 million had inadequate coverage.

Rationing is not a future possibility – it is a present reality. The Greeks say: "To know all to ask is to know half." If we start asking the right questions, we vastly improve our chances of coming up with the right answers. If we ask ourselves, how do we avoid rationing, I believe we do our society an injustice. If we ask, how do we allocate finite resources to meet infinite demand, and do it compassionately and justly, then I believe we can increase rather than decrease medical care in our most basic areas. Rationing can be described in the same words Mark Twain said about Wagner's music when he said: "It's not as bad as it sounds."

Fourth: How do we take limited dollars and buy the most health?

Humana's budget for the artificial heart is roughly equivalent to what society spends on eradicating smallpox. Consider the difference between the two. The fact is we have a system that seems to give dramatic high technology medicine the health care dollar, when a third of the kids in America have never seen a dentist, and 20% of the kids in America don't have their polio shots. The Robert Wood Johnson Foundation in 1982 found that 12% of all Americans, or one in eight, have serious problems with access to health care and found in that year, one million families had at least one member who was refused health care.

We must thoughtfully weigh the way we spend our health care dollars. We must develop a "sense of limits" in spending health care dollars, an objective sense that we are making an intelligent allocation of limited dollars.

Lester Thurow talks about an exercise for doctors in which every time they order an expensive procedure, they would have to pick an American worker to be sentenced to a period of slavery long enough to pay the medical bill for that procedure. Dr. Tom Starzle at the University of Pittsburgh recently gave a liver transplant to a 76-year-old woman. It cost $240,000. Tom Starzle should have had to go out and find 100 American families to give all of their yearly income so that he could understand that we can't do everything for everybody. Celebrity doctors performing dramatic, high-publicized procedures may gain national recognition but they do not add to the total national well being. It may make a doctor or a hospital famous, but it is not a cost effective expenditure of public funds. The "opportunity costs" of these resources are obviously much higher elsewhere. It may be great public relations, but it is poor health policy. For every person it saves, it condemns two or three more who today die because we are not allocating our dollars where they will buy the most health for America. We are, unfortunately, faced with a series of Hobson's choices. Harvey Cox, the theologian, says, "Not to decide is to decide." By avoiding these issues, we are deciding often in favor of the most inefficient and wasteful ways to spend our dollars. By not challenging our sacred cows, we are creating a tougher and more chaotic world for our children.

Fifth: Is it an economic asset to have two-thirds of the world's lawyers and the highest ratio of doctors and hospitals in America?

It is not an economic asset for America to have two-thirds of all the lawyers practicing in America; it is an economic cancer. Forty percent of the Rhodes scholars in this country go to law school. Japan trains 1,000 engineers for every 100 lawyers. We train 1,000 lawyers for every 100 engineers. Now which society in a technologically-based, information-based society is going to win? The one that trains lawyers? The same thing applies to physicians. It is estimated that there may be as many as 145,000 more physicians than needed by the year 2000. Duke points out every excess doctor, or every doctor in practice, increases the nation's health care costs by $300,000 annually. Thus, in an average career spanning 40 years, a single physician would create health care costs of some $12 million. You've got to limit the number of poeple going into those two fields.

We have among the highest physician to population ratio in the world, yet we add 15,000 new doctors each year.

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many areas of America ought to be put under the "good news today" column of the newspapers. But there are 200,000 excess hospital beds in the United States. That's equivalent to at least 1,000 hospitals out there that we don't need. A recent study found that 25% of all hospital days are inappropriate because the services rendered don't require hospitalization – services like oral medication. A hospital should be an institution of last resort.

The Journal of The American Medical Association stated it this way:

> *"The hospital of the future will be transformed into the critical care hub of a dispersed network of smaller clinical facilities, physicians offices and remote care sites that may stretch out as far as 200 miles from the core facility connected by air and ground critical care transport and integrated by clinical information and patient monitoring systems."*

I really believe there's no way we are going to come to grips with this problem until we look at some of these areas that aren't going to go away. One of the toughest is what Victor Fuchs calls "flat of the curve medicine" – those medical procedures that are the highest cost and achieve little or no improvement in health status. He says they must be reduced or eliminated. We must demand of professional societies and licensing authorities, that they establish some norms and standards for diagnostic and therapeutic practice that encompass both costs and medicine. We're going to have to come up with some concept of cost-effective medicine.

It seems to me the empirical evidence is overwhelming; there are massive inefficiencies in our health care system. Medical expenditures for the elderly in Miami, Florida, are twice as high those in Rochester, New York; there is strong evidence that one-third or more of coronary bypass operations are medically unnecessary; hospital use is 60% higher in the midwest than in the West;. CAT scans are used seven times more in certain parts of the country than they are in others.

In Detroit in 1981, 10% of the women delivered by Cesarean section; in Washington, D.C., in 1981 it was 24%.

Some experts postulate that anywhere from 30%-50% of the nation's health bill consists of expenditures that produce little or no demonstrable health benefit. In a country losing the economic race to the Pacific Rim, it is both tragedy and disgrace.

Sixth: Is death the enemy of the health care system, or is pain, suffering, and degradation? In the words of William Shakespeare do we not all "owe God a death?"

There are certain new realities we have not fully incorporated into our public policy response or our thinking.

First is the explosion of the elderly. The total U.S. population tripled between 1900 and 1980 – but the aged population grew eight times. The population over 85 grew 21 times. This is not change, it is demographic revolution.

Second, approximately 2,000,000 people die each year in the United States. Under today's medical miracles, rapid fatal death is shrinking as a cause of death. Heart disease claims 34%, malignancies claim 22%, while sudden deaths, like accidents, homicides, and suicides account for only 13%. Chronic conditions cause 87% of all deaths. Treating these chronic diseases causes the overwhelming majority of health care costs in the United States. In my opinion it is taking massive amounts of resources desperately needed elsewhere, and they should be spent on the living, not on the dead.

Third is the reality of our technologies. We can now keep a corpse alive. The new standard of care includes a whole range of Faustian technologies: resuscitation, intravenous feeding, stimulants, oxygen tanks, respirators, heart pumps, drainage tubes, etc. These technologies have made us scientific giants but we are still moral pygmies. We are technically smart enough to obscure the line between life and death but not morally intelligent enough to draw the line. We have a hard time even deciding "What is death?" and "When does it occur?" It is a daily practice in hospitals to bring terminally ill patients back to life – just so they can die a second time at great cost to the taxpayer.

One woman wrote to me of her mother:

> *"She has no awareness, no personality, no memory, no reason. . . . The human being is dead. All that is left is a food-digesting organism. But to the law, she's still living... Nursing home care did not afford the dignity to which I felt she was entitled – so here I am, essentially with a corpse I cannot bury, who would have gone timely and been fondly remembered by her family had not the marvels of medicine intervened.*
>
> *"Now we live with a daily horror situation that has gone on so long that it will be difficult to remember mother as a once talented, brilliant and vital family member."*

Tragically, many people who experience death in a family come out of the experience thinking medical treatment is the enemy.

We must look much more maturely at these sensitive issues. Victor Fuchs says in a number of areas, one of our assumptions is "We should spend any amount of money if a life is at stake." I'm intrigued because I governed a state that has lots of plane crashes. We've got high mountains. There were 101 plane crashes in Colorado last year. Was I supposed to close the schools and close the penitentiaries and send people out looking because a life might be at stake? It sounds good, but in fact when you're faced with that situation you have to do the best you can. You must balance the tragedy to be averted with the resources available.

Consequently, I think it is desperately important to discuss much more candidly and openly death and dying. We treat death as if it were optional. People talk about the right to die, as if we have the right to refuse to die. Once we stop treating death as an enemy and recognizing it as an inevitability, we can save massive resources. Today patients with massive strokes are saved from death but live for years in a comatose state. Others with metastatic cancer are subject to a myriad of studies and therapies that add little to their longevity.

I would suggest that while longevity is a virtue, prolongevity is a sin. I think we must look rationally at the phenomenal amount of resources we spend on the last few weeks of people's lives to only prolong suffering. We cannot afford a system where on our way out the door, we take $100,000 to $200,000 of our children's limited resources to give us a couple of extra days of painful existence. This practice is more than bad policy, it is intergenerational larceny. It is wasting resources our children desperately need elsewhere to compensate for the kind of world we are leaving for them.

If you can make people better, terrific. But in American medicine, it often seems to be against the law to die in peace. Most elderly don't fear death as much as they do the pain, suffering, degradation, and loss of autonomy that our Faustian technologies have brought to them. All our biological clocks must strike midnight. We must relearn what the early churchmen called "the grace of dying well."

Seventh: Why should we give taxpayer money to people just for reaching the age 65? Is it good public policy to have the highest life expectancy in the world at the age 80 while we are 20th in infant mortality?

It's another sensitive subject, and that's the way this whole system is slanted toward our benefit. When my wife and I bought our first house, our house payments were $49 PITI. A recent Congressional study said less than 50% of the kids under 30 will be able to buy their own homes. One of the great issues of the future is going to be intergenerational equity. Our kids will wake up and find out how badly we've cheated them.

America doesn't need any more age-based programs. Our programs should be based on need rather than age. That leads me into Medicare, the ultimate sacred cow. When Medicare was passed in 1965, the elderly were disproportionately poor. There was every good reason for Congress to vote for Medicare. But the elderly are no longer disproportionately poor. In 1970, 23% of the elderly were poor and 12% of the kids were poor. Today, 12% of the elderly are poor and 23% of the kids are poor. You no longer have those same reasons. Yet we give 254,000 millionaires Medicare and close well-baby clinics. We have socialized the cost of health care and given it to the elderly while ignoring needy kids.

But income adjusting Medicare will not be enough. There must be even tougher choices, and one of those I suggest is to make age a consideration in the delivery of health care.

I don't question the need to give both the young and the elderly access to preventive and primary care, but when it comes to limited resources that can't be made available to everyone, I approach the problem in a very personal way. I have a 17-year-old daughter. If there is a limited resource, and you have to decide between my 17-year-old daughter and me, give it to my daughter. Not because I'm being a hero, but because my daughter has 60.4 projected years ahead of her, and I have 28.1 statistical years ahead of me. Such a policy is not age discrimination, it's common sense — who should get any limited resources?

The delivery of expansive medical miracles to the explosive growing number of elderly is creating an unsustainable economic and social burden. We are allocating our governmental benefits to those who lobby us the hardest and comprise the biggest voting block, but we are not making rational allocations. Our present policies, in face of those realities, will prevent adequate health care for other generations, especially younger generations. It is bound to have an increasing distorting effect.

Dan Callahan writes of a similar impact in Great Britain:

> *"It is understood that the consequences of a desperate struggle to save the lives of the elderly cannot fail to have a distorting consequence for health care priorities and allocations generally."*

The longer I was in government, the more I realized we are moving into an era where we shall have to make "hard choices." That there is a public policy teeter-totter when given limited resources, when we push one side up, alas another side goes down. It is sad but true that we now have a system allowing the elderly to consume far more medical resources than we give to children.

I believe we will inevitably have to recognize age as a valid ethical consideration in the delivery of medical care. Is it not only fair, but desirable, to have a different level of care for a 10-year-old than for someone who is 100? Shouldn't public policy recognize that some people have far more statistical years ahead of them than others?

The aged are not a static group. It is a status that we all pass through. We are all locked in as males or females, black or white. Once a white male, always a white male. But we all age daily. In a marvelously egalitarian way, time takes its toll on us all. The elderly are the same people — at a different stage of their lives — we worry about when

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we deny prenatal care to pregnant women.

I turn 65 in the fast approaching year of 2000. I am not shooting a bullet in an intergenerational war, I'm not trying to take something from another generation, I realize I'm arguing for new rules that I know I will have to live and die by. In fact given the normal progression of public debate, mine might well be the first generation to whom they will apply. I have a great self-interest at the age of 53 to ensure that new considerations I argue for not be oppressive or heard-hearted. I will be their beneficiary or their victim.

I care a great deal about myself, but I also care for my children. The German thinker Dietrich Bonhoeffer observed during his fight against Hitler that "... the ultimate question for a responsible man is... how will the coming generation live?" Economists tell us that "capital is the stored flexibility" that we have to build better lives for our children. I feel it is morally repugnant if I use $100,000 or $200,000 of our kids limited resources as I'm on my way out the door unless it gives me substantially more of a quality life. I want to be valued as a senior citizen, but I don't want to unnecessarily impose on my children and spend massive resources for a few more months of painful existence.

All cultures distinguish between death after a normal life span and a death which is a premature death. Death due to age is universally accepted and understood. Death before a normal life span is universally distinguished, and usually invested with elements of tragedy.

We shrug and call pneumonia an "old man's friend" and yet rage with Lear at the death of the young. We understand with an atavistic wisdom that we cannot live forever and that death in old age is natural and inevitable. To fight death is useless.

I find it morally offensive at the age of even 53 to demand the same level of medical treatment as someone who has their whole life ahead of them.

Yet there is reason to pause. The ghost of the English system hands over this debate, a system that seems cruel to our eyes because it rations certain scarce resources on the basis of age. I do not argue for such a system.

We have other ethical options between massive oppressive technology imposing a slow painful death on us, and an arbitrary rationing using age as the criteria. I do not argue that age should be the criterion, but a criterion.

I find it hard to believe that the health care system should consider a person's blood pressure, whether or not they smoke, how much alcohol they drink, what their cholesterol count is, yet not consider their age. Age should not dictate, but it should be considered. That doesn't give anyone a license to abandon me, or treat me as superfluous. Far from it. But I should not and will not object if age is laid on the scale in deciding medical treatment.

I consider it relevant in how I treat me – why shouldn't the health care system? I no longer climb trees or play rugby. I don't lower my own self-esteem when I realize that I have an older body. I treat it with more care. I recognize that my time is limited. I spend more time smelling the flowers. If I consider it relevant, why shouldn't my doctor?

Dan Callahan makes a similar point:

"The elderly have already lived out a full life. They have not been denied (at least because of their age) the opportunities of living a life; and their death deprives them of less than a child or young person who has had no such opportunity. Not only does it seem justifiable to work harder, and to take more chances, to save and rehabilitate the life of a sick child, but also to allocate more resources to those conditions that bring premature death than to those that bring death after a long life."

In rationing scarce resources, age is an ethical and valid consideration.

Eighth: Has not our health care system taken on a Stalinist view of public policy?

We have in this country a media driven by humanitarianism. Whoever we can get on TV we try to save, and forget the rest. We treat individuals we can see, but we forget the statistics (who are no less individuals) we can't see.

I believe we must weigh the marvels of our health care technologies with other less visible but more cost effective strategies. You see the Barney Clarks of the world, you see the Baby Fayes; everybody is pulling for them; it's marvelous technology. But we don't see the third of women in America who don't get prenatal care in their first trimester. Stalin, though right, said, in a horrible way, "One man's death – that's tragedy. A million men's death – that's a statistic." It's true. We look at individuals but not statistics. The money we spent on the heart transplant for Mr. Schroeder could have been far more productively spent on the replacement of heart valves for 200 patients or 40%-50% of the poor, pregnant American women who receive no prenatal care in their first trimester. The quality of our mercy should rain on both identified and unidentified lives. We need non-emotional but compassionate yardsticks to measure how we spend limited resources, and we must be concerned with the total population – not merely those we see on TV.

Ninth: Are we not worshipping graven images of high technology?

In the area of artificial organs, I would announce right now that until other needs are met, no taxpayers' money will be spent on artificial organs. Are we going to wait until a politically active group of chronic heart patients – many of them smokers – wheel a bunch of artificial heart recipients before a congressional committee, their hearts literally and figuratively in their hands, and plea for the taxpayers to save their lives by providing publicly-paid-for artificial hearts? Is that how we want to set our health care priorities?

I am not a medical Luddite. I admire the miracles of medicine. But I contrast cornea transplants, cataract operations and hip replacements, whch add tremendously to the quality of life for many elderly, to artificial hearts. That doesn't mean we shouldn't experiment with artificial hearts, let me say we shouldn't eliminate any place medical science wants to go. Medical science has made its greatest discoveries from the unexpected. But it is only when all of a sudden the taxpayers say, "Ok, we're going to start to pay for this." In California they did something like this last year when they decided they were going to pay for transplants and then knocked 200,000 low income people off Medicare. That's not a good trade.

I believe if we zero-base budgeted the money we spend in many areas, it clearly would not meet the test of effective medicine. If we zero-base budgeted the $2 billion we spend on end stage renal disease, the $3 billion we spend on coronary artery bypasses, the $5 billion we spend on intensive care units, the $500 million a year we spend on CAT scans, we would probably dramatically reduce the amount of money we spend in all these areas and transfer that money to other, more cost effective areas.

The National Institute of Health called for greatly expanded federal research efforts to develop a fully implantable permanent artificial heart. Such devices, it said, "could provide a significant increase in life span, with an acceptable quality of life, for 17,000 to 35,000 patients below the age of 70 annually." The group estimated its annual cost at up to $5,000,000,000!

This is a staggering price to pay for the few people who would benefit. It will add significantly to the costs of health insurance premiums for all of us. It will eat into the budgets for Medicaid and Medicare. But it won't do a thing to prevent heart disease in the first place.

And if we think we can add availability of the artificial heart to other programs and still pay for them all, we are tragically mistaken.

My criticism is not of high technology. There are certain high technologies that deserve to be worshipped, certainly deserve to be respected. A kidney stone crusher can eliminate the need for 80,000 surgical procedures. My criticism is the mindless way in which we invent certain high technologies and then are forced to use them, at the same time foregoing many more high-benefit procedures and technologies that could save so many more lives.

An artificial heart is a high technology, low-benefit invention because its cost is very high and it only benefits a few people.

The ultimate goal to which this society should apply its high technology is the understanding of the mechanisms that are the underlying causes of the disease.

Lewis Thomas writes that the diseases that were the greatest menace to human health when he was a medical student on the wards of Boston City Hospital 50 years ago were, "In the order of degree of fear they caused in the public mind, tertiary syphilis of the brain, pulmonary tuberculosis, acute rheumatic fever, and poliomyelitis." He points out that because of classical clinical research, "All four have nearly vanished as public health problems, and the vanishing involved the expenditure of pennies compared to what we'd be spending if they were still with us." Now that is true high technology medicine.

But just as we would never have cured polio by putting all our money in artificial lungs, so also we will not understand and cure heart disease if we put our money into artificial hearts. In a world of limited resources such choices become clear.

I won't give you any more heretical questions though there are many others. We should all think of some. Perhaps the question of "fee for service medicine." Too many doctors believe "fee for service medicine" is a theology. It is not. We obviously can and are organizing medical care delivery through a wide variety of alternatives. HMO, PPO, and alternative delivery systems of all kinds must be encouraged if we are not to bankrupt America. The "good old days" of cost reimbursement and fee for service medicine are not coming back. To wait for these "good old days" to come back is a triumph of hope over reason roughly equivalent to leaving the landing lights on for Amelia Earhart.

Another notable absence on the tablets was any absolute stricture against "two levels of health care." I believe the principal task of the health care system today is to provide health care to those who do not have access to it. But I believe it is counterproductive to paralyze ourselves over this issue when we already have a number of levels of health care in the United States. Does anyone think that those with resources don't get a better level of care than those on welfare? I believe it is important to get basic health care to those not covered, and not back away from that worthy goal if it contains an element (as it inevitably will) of "two levels" of health care.

Let me conclude this way. I am reminded of a story that came out of the Second World War when there was rationing of all kinds, when a man went into a restaurant and ordered a cup of coffee and then

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asked for more sugar. The waitress cast a cynical eye on him and said, "Stir what you have." I believe that is what America must do with its medical care expenses. We must stir between the more than $1 billion a day that we already put into health care. There is not enough money, and we can buy an incredible amount of health if we in fact simply utilize our resources better.

Believe me, I understand I'm not even touching all of them. The great genius of democracy is that once you start asking the right questions, we can all get together to come up with the answers.

We can begin by recognizing that our "health care system" has not too much to do with health, has little to do with caring and clearly is not a system. That recognition of reality would be a giant step forward.

Then we must move simultaneously in many directions to reform our health care delivery mechanisms. We really do have to develop a concept of "appropriate" care or some sort of "cost effective medicine."

We can encourage patients to be efficient consumers.

We can stop training so many doctors and lawyers. We can, via tort reform, give some protection to the physicians for the incredible cost of malpractice insurance.

We can close hospitals, some hospital beds, ICU units. We can regionalize some high technology medicine.

We can recognize that our medical destiny lies mainly in our own hands. We can encourage health education, health promotion. We can move more from health care to self-care. We can tax cigarettes and alcohol, form hospices, promote immunization.

We can push for alternative delivery systems. We can license para-professionals. We can develop DRGs for physician services for inpatient hospital care; we can more fully develop pre-admission screening, second opinion programs, and concurrent review of hospital care.

We can, in short, develop an ethic of restraint — not an ethic of "do more." Then, after we have done all those seemingly impossible things, we will have to discuss how to fairly and compassionately "ration" medicine.

In summary, the issue is again, "What kind of world are we going to leave our kids and grandkids?"

Health care is a very high social and public policy priority, but it isn't the only priority — it can't be a monopoly. We can, working together, find ways to deliver more health care to more people at an even lower cost. ■

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Resolutions
# of the
132nd MSMA House of Delegates

Resolution 1

IV Chelating Agents

Introduced by the Metropolitan Medical Society of Greater Kansas City

RESOLVED, that the Missouri State Medical Association call upon the Legislature of the State of Missouri to prohibit the use of chelating agents except as approved by the FDA.

House Action: The above substitute resolution was adopted.

Resolution 2

Medical Care for the Homeless and Indigent

Introduced by the Metropolitan Medical Society of Greater Kansas City

RESOLVED, that the Missouri State Medical Association seek to amend the law which established the State Legal Expense Fund to extend professional liability insurance protection to any state-contracted, licensed physician who delivers general medical care to state-designated low-income patients for minimal or no compensation in state-designated clinics.

House Action: The above substitute resolution was adopted.

Resolution 3

Anabolic Steroids as Controlled Substances

Introduced by the St. Charles-Lincoln County Medical Society

RESOLVED, that the MSMA support the categorization of anabolic steroids and growth hormones as controlled substances; and be it further

RESOLVED, that the MSMA refer this matter to the Legislative Committee to draft legislation to effect the inclusion of anabolic steroids and growth hormones as controlled substances; and be it further

RESOLVED, that the Missouri State Medical Association, through its lobbying efforts, actively support this bill; and be it further

RESOLVED, that the bill be written not later than September of 1990 so that it can be introduced in the 1991 legislative session; and be it further

RESOLVED, that this resolution be presented to the AMA House of Delegates for consideration.

House Action: The above amended resolution was adopted.

Resolution 4

Peer Review: Reviewer Accountability

Introduced by the St. Charles-Lincoln County Medical Society

RESOLVED, that MSMA reaffirm physician review of physician work rather than review of physician work by non-physicians; and be it further

RESOLVED, that the MSMA encourage HCFA to allow the PRO to cooperate with the Board of Healing Arts in matters of potential discipline; and be it further

RESOLVED, that the MSMA encourage HCFA to modify its policy of PRO reviewer anonymity into the next contract, so that their work may also be reviewed.

House Action: The above amended substitute resolution was adopted.

Resolution 5

Opposition to Therapeutic Substitution of Pharmaceuticals

Introduced by the St. Charles-Lincoln County Medical Society

RESOLVED, that the MSMA go on record as being opposed to therapeutic substitution, not generic substitution; and be it further

RESOLVED, that the MSMA, through its hospital medical staff section, disseminate information, at least in the form of a letter, to each hospital medical staff warning of the pitfalls of allowing therapeutic substitution.

House Action: The above amended resolution was adopted.

Resolution 6

Protection of Personal Assets in Malpractice Judgments

Introduced by the St. Louis Metropolitan Medical Society

RESOLVED, that Missouri physicians and dentists be protected in malpractice judgments against loss of personal pension and retirement plans, such as Keough plans and IRA plans.

House Action: The above resolution was referred to MSMA Council.

Resolution 7

Reporting Only Paid Professional Liability Claims on Licensing Application

Introduced by the St. Louis Metropolitan Medical Society

RESOLVED, that the present state regulation requiring physicians to report if they have been involved in a liability action be repealed, and be it further

RESOLVED, that state regulations require physicians to report on state license applications only those incidents where a liability claim has actually been paid on behalf of the physician.

House Action: The above resolution was not adopted.

Resolution 8

License Applications for All Professional Registration Boards Require Reporting of Professional Liability Actions

Introduced by the St. Louis Metropolitan Medical Society

RESOLVED, that members of all professions be required to report only those incidents where a liability claim actually has been paid on behalf of the professional to their respective State License Boards.

House Action: The above resolution was not adopted.

Resolution 9

More Socioeconomic and Political Issues be Published in MISSOURI MEDICINE

Introduced by the St. Louis Metropolitan Medical Society

RESOLVED, that the articles in the Missouri State Medical Journal be increasingly concerned with social, economic, and political issues that are of concern to Missouri State Medical Association members, provided it does not affect the publication of scientific articles.

House Action: The above amended resolution was adopted.

Resolution 10

Emergency Care by HMOs

Introduced by the St. Louis Metropolitan Medical Society

RESOLVED, that all prepaid health care plans should be required by law to authorize and pay for emergency care of their members by ALL care givers, including non-participating physicians, and be it further

RESOLVED, that all pre-paid health care plans be made financially responsible when the emergency room physician feels that the transfer to another facility might interfere with the best interest of good patient care, and be it further

RESOLVED, that all pre-paid health care plan contracts must by law clearly state and explain the benefits.

House Action: The above amended substitute resolution was adopted.

Resolution 11

MSMA Position on Expanding the Definition of "Unprofessional Conduct"

Introduced by the St. Louis Metropolitan Medical Society

RESOLVED, that:

A. The practice of medicine includes, but is not limited to:
   1. Direct patient care by the responsible physician of record or his consultants;
   2. Indirect patient care by ancillary consultants (e.g. radiologists, pathologists);
   3. Use of medical knowledge and experience in peer reviewed activities;
   4. Expert testimony in court on medical issues, and
   5. Any contractual influence on the specific care of a specific patient relative to their medical needs (e.g. pre-admission denial, post-admission stay, denial of appropriate tests or treatment).

B. For this reason, the performance of the activities or functions are properly subject to and accountable to the medical establishment and/or the State Board of Registration for the Healing Arts for the validity and appropriateness of medical care and judgment involved in performing such activities or functions.

House Action: The above substitute resolution was adopted.

Resolution 12

Loss of Enjoyment Damages

Introduced by the St. Louis Metropolitan Medical Society

RESOLVED, that MSMA work to prevent the concept of hedonic damages from being accepted in the Missouri courts, resulting in possible increase in damage awards and a subsequent increase in insurance premiums.

House Action: The above resolution was referred to MSMA Council.

Resolution 13

Written Disclosure to Beneficiaries of Estimated Charges

Introduced by the St. Louis Metropolitan Medical Society

RESOLVED, that the requirement to have Medicare beneficiaries sign the "estimate for surgery" forms apply only to patients seen initially in the office rather than at the bedside in the hospital, after being admitted by someone else.

House Action: The above resolution was adopted.

Resolution 14

Equal Treatment Under the Law

Introduced by the St. Louis Metropolitan Medical Society

RESOLVED, that MSMA work to ensure that traditional American medicine be given fair treatment with other systems, whether capitated, socialized medicine, or a managed care system, and be it further

RESOLVED, that MSMA work to ensure that physicians be given equal treatment under the law, by publicizing the selective and capricious restrictions on physicians as compared with other professionals in our society — lawyers, engineers, accountants and the like.

House Action: The above amended resolution was adopted.

Resolution 15

MSMA Policy Statement on Risk Management and Professional Liability

Introduced by the St. Louis Metropolitan Medical Society

RESOLVED, that the MSMA reduce the economic impact of professional liability and strengthen the patient-physician relationship by forming a task force to develop recommendations and strategies on:

- The designation of a single state agency to coordinate action to resolve the dilemma.
- An outline of the essential elements of effective risk management programs to be undertaken by all providers.
- The promotion of risk management programs through such mechanisms as the provision of lower malpractice insurance premiums to providers with effective risk management programs; utilization of participation in risk management as a criterion for provider selection; and setting of preferential reimbursement rates for providers with effective

risk management programs.

- The collection and analysis of data as the foundation for decision-making on future tort reforms, arbitration or mediation panel review and no-fault proposals.
- The delineation of basic guidelines for a no-fault insurance system.
- The strengthening of the peer review process and provider sanctions.
- The recognition of consumer education as a shared responsibility of providers, purchasers, insurers, and consumers.

Fiscal Note: Portions could be included in present budget for Tort Reform; could possibly require an additional $7,500.

House Action: The above resolution was referred to MSMA Council.

Resolution 16

PRO Review Allow for Telephone Discussions

Introduced by the St. Louis Metropolitan Medical Society

RESOLVED, that MSMA educate its members with the PRO discussion process in order to protect physicians, particularly for future quality of care isssues, and be it further

RESOLVED, that MSMA develop a methodology which ensures that the physicians under review have access by telephone to the appropriate PRO specialist. This will allow the same attending physician to determine how to frame a written response.

House Action: The above resolution was not adopted.

Resolution 17

Continue Tort Reform

Introduced by the St. Louis Metropolitan Medical Society

RESOLVED, that the MSMA form a Task Force on Tort Reform to plan the next steps in this continuing effort, and be it further

RESOLVED, that the following items be studied:

1. Collateral source reductions;
2. Statute of limitations for minors be lowered from 20 years to 13 years or from six to three years in actions brought against health care providers;
3. Voluntary Alternative Dispute Resolution;
4. Bifurcation of trials;
5. "Cap" on non-economic damages; no ceiling on economic losses;
6. Limit on fees for expert witnesses;
7. Qualifications for expert witnesses;
8. "Clear and convincing" evidence standard to supplement the current standard of "preponderance of evidence";
9. Joint tort feasor concept which enable judges to require defendants to pay their pro rata share of damages if it is decided that multiple parties contributed to an injury;
10. Plaintiffs who bring frivolous lawsuits should be required to pay attorney's fees and court costs;
11. Disclose defense costs on request from defendant physicians at close of cases;
12. Limiting the scope of legal doctrines designed to extend the liability of the medical community and medical manufacturers beyond already generous boundaries (Kirk v. Michael Reese Hospital & Medical Center);
13. Affidavit of non-involvement;
14. Contingent fees for attorneys;
15. Eliminate joint and several liability; and
16. Adopt civil procedures for taking of depositions.

Fiscal Note: No significant fiscal impact. Could be included under current budget for Tort Reform.

House Action: The above resolution was referred to MSMA Council.

Resolution 18

Health Care Magazine for the Public Sponsored by the AMA

Introduced by the St. Louis Metropolitan Medical Society

RESOLVED, that the AMA study the feasibility of publishing a health care magazine for the lay public and report back by the Interim meeting in 1990.

House Action: The above resolution was adopted.

Resolution 19

AMA Auxiliary Liaison Appointed to the Board of Trustees

Introduced by the St. Louis Metropolitan Medical Society

RESOLVED, that there be the addition of an Auxiliary representative on the Board of Trustees, Councils on Scientific Affairs, Medical Services, and other appropriate Councils and Committees of the American Medical Association.

House Action: The above resolution was not adopted.

Resolution 20

Private Utilization Review

Introduced by the St. Louis Metropolitan Medical Society

RESOLVED, that in order to assure high quality patient care, the Missouri General Assembly pass legislation to set standards for the operation of private utilization review organizations; and be it further

RESOLVED, that these standards and administrative criteria of private utilization agencies be available as public information to all providers and utilizers of medical care.

House Action: The above substitute resolution was adopted in lieu of Resolutions #20 and #39.

Resolution 21

PRO Savings vs. HCFA Expenses

Introduced by the St. Louis Metropolitan Medical Society

RESOLVED, that the MSMA and the AMA should determine if the savings to HCFA effected by PRO are greater than expenses incurred by PRO **and physicians** and that this information is to be provided to the Council as soon as it is available.

House Action: The above substitute resolution was adopted.

Resolution 22

Increase Representation of Graduates of Foreign Medical Schools in MSMA

Introduced by the St. Louis Metropolitan Medical Society

RESOLVED, that increased representation of graduates of foreign medical schools (GFMS) be solicited and encouraged by the MSMA and the local medical societies, and be it further

RESOLVED, that increased representation of GFMS be established in MSMA in order to retain the above objective, and be it further

RESOLVED, that an Ad Hoc Committee of GFMS be established in MSMA in order to attain the above objective and be reviewed in three years.

House Action: The above amended resolution was adopted.

Resolution 23

Misinformation — Medical Care Cost and Cost Increase

Introduced by the Hospital Medical Staff Section

RESOLVED, that the MSMA inform the public of the reasonable costs and rate of increase of costs of health care in the United States through press releases, press conferences and paid advertising. Information should include, but not be limited to (1) Similarity of rate of increase of medical and non-medical cost when the increase in population served and intensity of services is taken into consideration; (2) The use of Social Security funds for non-social welfare purposes and; (3) The importance of health lifestyle choices, and be it further

RESOLVED, that this resolution be transmitted to the MSMA House of Delegates at the 1990 Meeting and to the AMA House of Delegates at the Annual 1990 Meeting for adoption.

Fiscal Note: Would depend on amount of research and advertising desired. If passed on to AMA would not have too much impact on MSMA budget. If project to be done by MSMA, estimate minimum of $25,000 to $30,000.

House Action: The above resolution was adopted.

Resolution 24

Expiration of Prescription Drugs

Introduced by the Hospital Medical Staff Section

RESOLVED, that the Missouri State Medical Association work with the State Board of Pharmacists in the State of Missouri to have expiration dates of prescription medicines imprinted upon the label of such medicine when dispensed; and be it further

RESOLVED, that this resolution with wording changes to make it applicable to the national situation be submitted to the A-90 AMA HMSS meeting and that this resolution go forward to the AMA House of Delegates at the I-90 AMA House of Delegates meeting.

House Action: The above amended resolution was adopted.

Resolution 25

Missouri Medicaid Priority Funding

Introduced by the Mineral Area Medical Society

RESOLVED, Priority medical services, such as those defined by the Missouri Medicaid Physicians Task Force, should be funded by Medicaid at levels close to those of the private sector. (See original resolution for priorities)

RESOLVED, Missouri State Medical Association Council encourage the use of these priorities in obtaining waivers from the Federal government for improving our Medicaid program in Missouri.

RESOLVED, Recommendation that the above resolutions be budget neutral in respect to the total Medicaid budget.

House Action: The above substitute resolution was adopted.

Resolution 26

Physician and Spouse Voter Registration

Introduced by Gary A. Dyer, M.D., and
the Buchanan County Medical Society

RESOLVED, that MSMA and the MSMA Auxiliary actively promote voter registration of physicians and their spouses prior to the 1990 election.

House Action: The above resolution was adopted.

Resolution 27

Medicaid — Uniform Coding System with Medicare

Introduced by Robert Schaaf, M.D., and
the Buchanan County Medical Society

RESOLVED, that the Missouri State Medical Association urge Missouri Medicaid to adopt the Medicare carrier's codes for type of service and place of service; and be it further

RESOLVED, that the Missouri State Medical Association request that the Missouri legislature mandate a unified coding system for Missouri Medicaid based upon the Medicare type of service and place of service codes.

House Action: The above resolution was adopted.

Resolution 28

Tobacco Tax for Medicaid

Introduced by the Buchanan County Medical Society

RESOLVED, that MSMA strongly support a substantial increase in the tax on tobacco, including smokeless tobacco; and be it further

RESOLVED, that the revenue from this tax be earmarked specifically for increasing Medicaid Federal matching funds; and be it further

RESOLVED, that MSMA enter into a coalition with appropriate groups to sponsor the needed legislation and work for its passage.

House Action: The above resolution was adopted.

Resolution 29

MSMA Position on Recycling

Introduced by the Buchanan County Medical Society

RESOLVED, that MSMA strongly supports statewide and local recycling efforts.

House Action: The above resolution was adopted.

Resolution 30

Medical Tort Reform Initiative Petition Fund

Introduced by the Buchanan County Medical Society

RESOLVED, that a Medical Tort Reform Initiative Petition Fund be established by MSMA to receive voluntary contributions by physicians and others; and be it further

RESOLVED, that the goal is $2,500,000; and be it further

RESOLVED, that physicians be encouraged to contribute $2,000 each; and be it further

RESOLVED, that the money, once collected, be used for achieving major medical tort reform in Missouri through the initiative petition process; and be it further

RESOLVED, that the initiative petition be carried out when the timing is advantageous, because of public support; and be it further

RESOLVED, that a record be kept of contributions and contributors, and refunds be made if the goal is not achieved in two years, or if federal legislation makes the initiative petition unnecessary.

Fiscal Note: Money received should pay for expense to MSMA. No signficant fiscal impact.

House Action: The above resolution was referred to MSMA Council.

Resolution 31

Patient and Physician Right to Privately Contract for Health Care

Introduced by Gary A. Dyer, M.D., Robert Schaaf, M.D.,
and the Buchanan County Medical Society

RESOLVED, that the official position of MSMA is:

Any patient, regardless of health care insurance coverage (including Medicare and Medicaid), always has the basic right to privately contract with a physician for wanted or needed health care services, and to personally pay for those services when they are not covered or are deemed unnecessary by the health care plan. Neither the patient nor the physician should be harassed, penalized, or otherwise obstructed by the health care plan or the government from exercising this basic right; and be it further

RESOLVED, that this resolution be taken to AMA (A-90) with the intent of making the MSMA position the AMA position; and be it further

RESOLVED, that MSMA urge AMA to pursue all legislative and legal means to permanently preserve the patient's basic right to privately contract with physicians for wanted or needed health care services, and to reverse any limitations imposed by HCFA or other insurance or health care plans.

House Action: The above resolution was adopted.

Resolution 32

Professional Liability and Tort Reform Blue Ribbon Committee

Introduced by MSMA Council

RESOLVED, that the MSMA House of Delegates give its full support to the formation and function of the MSMA Professional Liability and Tort Reform Blue Ribbon Committee, and be it further

RESOLVED, that the Committee is to recommend to the MSMA Council by August 1990 what the MSMA position should be on further tort reform measures and efforts to reduce medical professional liability claims and events.

House Action: The above substitute resolution was adopted.

Resolution 33

CPT 4 Code for Precertification

Introduced by the Greene County Medical Society

RESOLVED, that the AMA be requested to add to or modify their existing CPT 4 Case Management Service Code to enable the physician to bill for this uncompensated time expenditure.

House Action: The above resolution was adopted.

Resolution 34

Missouri Physicians Health Program

Introduced by the Greene County Medical Society

RESOLVED, that since this is a program run by, and for, the physicians of the State of Missouri, that we ultimately should be responsible for its funding; and be it further

RESOLVED, that we wish to provide ongoing funding for the program by an annual assessment of each dues paying member of the Missouri State Medical Association. This assessment is to be determined annually at dues time, after alternative sources of funding have been considered, i.e. contributions from medical malpractice carriers, hospitals, individuals, etc. as well as charges assessed against individual participants, and be it further

RESOLVED, that the annual budget of this program be closely scrutinized by the Missouri Physicians Health Committee, and by the Executive Council of the Missouri State Medical Association, before any such assessment is made.

House Action: The above resolution was referred to MSMA Council.

Resolution 35

Profit By Referral — Real or Perceived?

Introduced by Bruce McClennan, M.D.,
and Bruce Walz, M.D., St. Louis

RESOLVED, that the American Medical Association Council on Ethical and Judicial Affairs revise its conflict of interest guidelines to consider investment or ownership by either physicians or members of their families of diagnostic or therapeutic facilities to which they refer, with the single exception of remote rural facilities that would otherwise be deprived of needed services to constitute an unethical conflict of interest which is detrimental to organized medicine and to the health care of the nation, and be it further

RESOLVED, that the revised guidelines be publicized widely as reflecting the concerns of the medical profession for this perceived dilemma.

House Action: The above resolution was not adopted.

Resolution 36

Task Force on Drunken Driving

Introduced by James R. Blaine, M.D.,
and the Greene County Medical Society

RESOLVED, that the Missouri State Medical Association shall support all efforts to remove drunken drivers from the Missouri roads, and be it further

RESOLVED, the MSMA shall encourage component medical societies to develop local task force committees to include physicians, prosecuting attorneys, law enforcement officials, and most importantly, members of the state legislature, and be it finally

RESOLVED, that this resolution be introduced at the AMA level for consideration as the position of the AMA and all U.S. physicians.

House Action: The above resolution was adopted.

Resolution 37

Recent Dramatic Increase in Employer-Provided Health Plan Costs

Introduced by the Greene County Medical Society

RESOLVED, that the MSMA investigate the cost of employer-provided medical plans in Missouri and the rationale for any recent increases, and be it further

RESOLVED, that the MSMA contact and maintain a liaison with the Missouri Division of Insurance as part of the above investigation, and be it further

RESOLVED, that the MSMA disseminate the results of said investigation to its members, to the public, and to employers who may, without this information, be convinced to participate in ill-advised cost containment schemes, and be it further

RESOLVED, that the MSMA form a Medicine-Business Committee, inviting participation by the business community, to foster ongoing communication and mutual education, as well as to promote constructive problem-solving for employers who provide health care benefits.

Fiscal Note: $22,500.

House Action: The above resolution was referred to MSMA Council for prompt action.

Resolution 38

Office Lab Tests

Introduced by Luis B. Anglo, M.D., St. Louis

RESOLVED, that the American Medical Association express its support for Medicare patients having full access to physician office services, including laboratory services, as they had before retirement, and be it further

RESOLVED, that the American Medical Association urge the Health Care Financing Administration to refrain from imposing restrictions on the day-to-day management of medical practices, especially when these regulations may decrease access to patient services and increase the cost of health care, and be it further

RESOLVED, that the AMA asks the Health Care Financing Administration to postpone implementation of this regulation until its full impact on patient access to care can be assessed.

House Action: The above resolution was referred to MSMA Council for action pending the promulgation of final Federal regulations pursuant to the Clinical Laboratory Improvement Amendments of 1988.

Resolution 39

Registration of Private Utilization Review Agencies

Introduced by the Greene County Medical Society

(Substitute Resolution 20 was adopted in lieu of Resolution 20 and 39. See Resolution 20).

Resolution 40

Mandatory HIV Testing

Introduced by the Metropolitan Medical Society of Greater Kansas City

RESOLVED, that the MSMA support the revision of the current Missouri statutes to allow the patient's physician to order mandatory HIV testing in patients undergoing procedures and/or treatment that could expose health care workers to HIV infection.

House Action: The above resolution was referred to MSMA Council for discussion and report back to 1991 Annual Convention.

Resolution 41

Recycling

Introduced by the West Central Medical Society

RESOLVED, that the Missouri State Medical Association request Browning-Ferris Industries (BFI) to implement a comprehensive recycling program in metropolitan Kansas City, and to secure a landfill site not adjacent to our major water resource; and be it further

RESOLVED, that the Missouri State Medical Association request BFI to secure processors for recycled glass, paper, plastics, aluminum, steel, etc., which, in turn, would stimulate new industry and jobs for the metropolitan area.

House Action: The above resolution was adopted.

Resolution 42

Right to Forgo Life Support

Introduced by the Cape Girardeau County Area Medical Society

RESOLVED, that the Missouri State Medical Association opposes any legislation which requires court approval for the termination of life support systems (including artificial nutrition/hydration), or that imposes an arbitrary waiting period before life support systems (including artificial nutrition/hydration) can be withdrawn, and be it further

RESOLVED, that the Missouri State Medical Association calls upon the Legislature of the State of Missouri to delete the phrase in section 459.010 (3) of the "Missouri Declaration on Life Support," which defines providing artificial hydration or nutrition (tube feeding) as "not being a death-prolonging procedure"; and be it further

RESOLVED, that the Missouri State Medical Association supports additional legislation which affirms the rights of Missouri citizens to appoint a "Health Care Surrogate." This individual (s) could be chosen by a competent patient to act as his/her medical proxy making health care decisions when patient decision making capacity is lost. Such duly appointed medical proxies should have power to approve or refuse any and all medical treatment, including food and water provided by artificial means (tube feeding), when the burdens of such treatment outweigh the benefits and/or such treatment would violate the wishes of the patient as known by the proxy. Missouri physicians therefore support prompt legislative approval of a Health Care Surrogacy Act or its equivalent to help insure our citizens' right of self-determination; and be it further

RESOLVED, upon passage of satisfactory health care surrogate legislation and deletion of the restrictive phrase in Section 459.010 (3), MSMA will support and publicize the value of such legislative changes to Missouri citizens and to physicians and health related professions; and be it further

RESOLVED, that ethical decisions such as the right to refuse treatment be left to the individual, family and/or Health Care Surrogate and not to the State.

House Action: The above substitute resolution was adopted.

Resolution 43

JCAH Requiring Documentation of "Psychosocial Needs" in Every Medical Chart

Introduced by the Cape Girardeau County Area Medical Society

RESOLVED, that the JCAH requirement for age appropriate psychosocial needs being documented in **every** chart regardless of physician judgment is inappropriate. It should be the individual physician's prerogative as to what, if any psychosocial want/need should be placed in the patient's permanent and increasingly public medical record.

House Action: The above amended resolution was adopted.

Resolution 44

Missouri Medicaid Billing Codes

Introduced by James T. Rogers, M.D.,
and the Greene County Medical Society

RESOLVED, that the MSMA strongly urge Missouri Medicaid to adopt the same Federal CPT codes for billing purposes.

House Action: The above resolution was not adopted.

Resolution 45

Medicaid Claims Processing

Introduced by James T. Rogers, M.D.,
and the Greene County Medical Society

RESOLVED, that the MSMA strongly urges Missouri Medicaid to review all contents of such claim with the first rejection, saving needless processing delays.

House Action: The above resolution was adopted.

Resolution 46

Assistance to the Board of Healing Arts by Local Medical Society

Introduced by the West Central Medical Society

RESOLVED, that the MSMA urge that the Board of Healing Arts be given the authority to exercise the option of contacting the local medical societies to assist in the discovery regarding complaints against physicians and that medical societies may make recommendations to the Board of Healing Arts.

House Action: The above resolution was referred to MSMA Council.

Resolution 47

Pre-existing Conditions as a Basis for Denial of Health Insurance

Introduced by Carol F. Williams, M.D., St. Louis

RESOLVED, that MSMA considers the growing pool of individuals who are uninsurable because of identified pre-existing conditions to have a detrimental effect on the delivery of health care to them, and be it further

RESOLVED, that MSMA undertake a study to document the magnitude of this problem and to recommend possible solutions through the Medical Economics, Third Party Medicine, and Governmental Relations Commission, and be it further

RESOLVED, that the study and recommendations be completed for report to the MSMA Council by its August 1990 meeting for action by the Council; and be it further

RESOLVED, that MSMA opposes any request by health insurers to provide complete copies of medical records in lieu of a physician's summary.

Fiscal Note: Approximately $3,500.

House Action: The above amended resolution was adopted.

Resolution 48

Hunting Accidents and Uninsured Shooters' Tax

Introduced by William Gondring, M.D.,
and the Buchanan County Medical Society

RESOLVED, that MSMA recommend to the Missouri State Legislature that hunting accidents, resulting from the negligent identification of hunted game, resulting in personal injury to another human being, constitute the loss of the hunting license of the shooter in question for a period of no less than five years, and be it further

RESOLVED, that MSMA recommend to the Missouri State Legislature that a Liability Tax, also known as an Uninsured Shooters' Tax, be applied to hunting permits which constitutes the largest percent of firearms related to hunting accidents. Said permits to include the Resident and Non-Resident Small Game Hunting Permits; Resident and Non-Resident Spring Turkey Permits; Resident and Non-Resident Fall Turkey Permits; Resident and Non-Resident Deer Firearms Permits; and Resident and Non-Resident Hunting and Trapping Fur Bearing Permits. The Uninsured Shooter Tax is to provide up to a $50,000 liability fund awarded to the victim upon investigation and recommendation of the Missouri State Conservation Office, and be it further

RESOLVED, that MSMA recommend to the Missouri State Legislature that a Liability Tax, also known as an Uninsured Shooters Tax, be applied to the purchase of all firearms, said tax to provide up to a $50,000 liability award in the event of an accidental hunting accident resulting from the negligent identification of wild game resulting in human injury with said recommendation of the Missouri State Conservation Office.

House Action: The above resolution was not adopted.

Resolution 49

Critical Incident Stress Debriefing (CISD)

Introduced by J.C. Corvalan, M.D., and
the St. Louis Metropolitan Medical Society

RESOLVED, that the Missouri State Medical Association supports the efforts of the Greater St. Louis Region Fire EMS Officers Association in the development and implementation of a regional Critical Incident Stress Debriefing (CISD) Team.

House Action: The above resolution was adopted.

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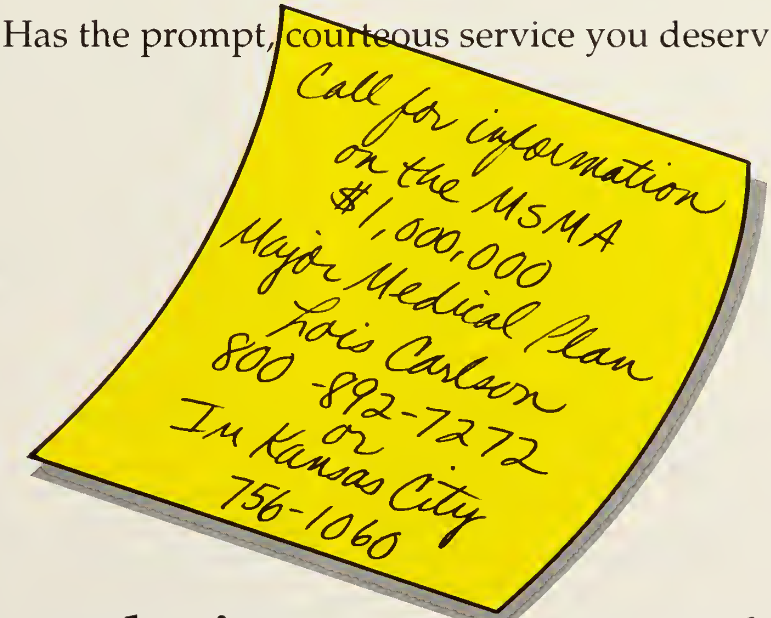
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Committee and Commission Reports

Committee on Publications

The 86th volume of *Missouri Medicine* contained 28 scientific articles, three special articles, 12 guest editorials, one feature story, one photo feature of the MSMA renovation, one commentary, and two listings of the Final Disciplinary Actions for the Board of Healing Arts. Twelve issues were produced, including the annual directory issue in August. Each issue had an average circulation of 6508.

Throughout the year *Missouri Medicine* featured original artwork created or owned by eight MSMA members, with Missouri artists' works appearing on three covers. The September cover featured a full page, four-color bleed photograph of the MSMA Headquarters following renovation. *Missouri Medicine* has received special recognition from Sandoz Pharmaceuticals in their Medical Journalism Competition in each of the last two competitions. The 1989 awards had not been announced at this writing.

The special articles featured in 1989 covered the topics of physician stress, hospital antitrust liability in dealings with downstream providers, and a proposal for a physicians' charity care program. As in the past, the July issue contained the proceedings from the MSMA Annual Meeting and the August issue contained the annual membership directory.

After serving three years as Managing Editor of *Missouri Medicine*, Susan Flanigan Gold resigned to accept another position. Valerie A. Peters, a 1986 graduate of the University of Missouri-Columbia School of Journalism and Editorial Assistant for the past three years, assumed the position of Managing Editor. The transition officially took place with the January 1990 issue of *Missouri Medicine.*

The editors wish to express appreciation to all who submitted scientific manuscripts and to those who contributed editorials, special articles and other input to the journal. The complete financial report for the 1989 journal is included in the financial statement of the Missouri State Medical Association. The report is published in the March issue of *Missouri Medicine* and is included in the Delegate's Handbook.

Donald G. Sessions, *Chairman*
Ramona Chapman
Jack J. Curtis
John J. Daniels
Stephen Hamburger

Ad Hoc Committee on Sunsetting

The Committee on Sunsetting met via conference call January 23, 1990.

The committee recommended that the following policies be sunsetted:

Acupuncture: The MSMA urges the Missouri State Board of Registration for the Healing Arts to utilize such legal and statutory powers as may be available to declare that the principles apparently involved in the practice of acupuncture and shiatsu, if found to be scientifically valid and medically beneficial, would fall under the definition of the practice of medicine. (*1973*)

Electroconvulsive Therapy: The Association supports the deletion of requirements that legal guardians obtain court orders authorizing electroconvulsive therapy for patients who have been declared incompetent. (*1983*)

Fireworks: The MSMA supports a ban on the sale of fireworks in Missouri. (*1976*)

Physician Assistants: The MSMA opposes state licensure or certification of additional health care personnel because there is no reason to accept a second class or second level of medicine. (*1979*)

In addition, the committee recommended sunsetting the following policies in favor of stronger, broader statements:

Drug Abuse: The MSMA supports educational programs for junior high school students that will emphasize the hazards of drug abuse. (*1982*)

Drunk Drivers: The MSMA agrees to cooperate with the Legislature or proper agencies to remedy the dangerous problem of drunk drivers. (*1974*)

School Bus Safety: The MSMA endorses special pre-licensing examination and investigation of prospective school bus drivers in Missouri, according to criteria established by law. (*1986*)
(The committee members believe this statement should include a statement on the safety of the school buses themselves, not just the drivers' qualifications.)

Duane C. Hellam, *Chairman*
Jerry Murrell
David Wilkinson
Melvin Kasten
Charlene Prather

Judicial Council

The MSMA Judicial Council had only one item referred to it this year. The MSMA Council, during its August meeting, referred the question of component societies allowing local society membership without MSMA membership.

Your Judicial Council researched MSMA Constitution and Bylaws and carefully studied two legal opinions. It is Judicial Council opinion that this practice is in violation of the MSMA Constitution and Bylaws.

We suggest that the MSMA Executive Committee and Council begin discussions with the component societies that are in such violation at their earliest convenience. The Judicial Council does hope that this will eliminate the problem. The Judicial Council will continue to monitor this situation.

E.T. Hansbrough, *Chairman*
Walter A. German
Ronald A. Youmans
Hugh E. Stephenson, Jr.
Richard V. Bradley

Commission on Interspecialty Medicine

The Commission on Interspecialty Medicine met on September 16, 1989.

The Commission members agreed that regular meetings provide each specialty an opportunity to do many things, increase communication between the specialty societies and strengthen communication with the Missouri State Medical Association (MSMA).

The regulations regarding AIDS Counseling and Tests were discussed along with the issue on confidentiality and the legal safeguards for AIDS patients. In recognition of the voluminous materal regarding AIDS, it was the consensus of the Commission members that a brief and easy to use document regarding AIDS would be beneficial to Missouri physicians. At the time of this meeting, the 1989 Supplement to the MSMA Physician's Guide to Missouri Law was being finalized.

Members discussed the subtle changes that are beginning to occur causing an erosion of financial support for hospital laboratories. Hospital laboratories are being caught between the DRG reimbursement for Medicare patients and the direct competition with commercial laboratories for outpatient procedures. Laboratory procedures for Medicare patients do not generate income for laboratories; however, outpatient procedures do generate income for the hospital laboratory.

The Commission members agreed that the hospital administrators should be involved as they have a major role in determining where the funds are to be allocated and how they encourage their respective medical staffs to utilize laboratory services.

The RBRVS is now in Phase 2 and is scheduled for completion next summer. The following will take place in Phase 2: a restudy of ophthalmology, thoracic surgery and pathology; expanding the Phase 1 surveys of internal medicine, orthopedic surgery and dermatology; reworking of the practice-cost portion of the formula for the Medicare fee schedule; fine-tuning of the CPT-4 codes for physicians' services; special attention for global fees for surgery; reform of office visit codes; and adding of 14 more specialties and subspecialties into the RBRVS.

There was considerable discussion and interest expressed in increasing the tax base in Missouri to increase Medicaid reimbursement to physicians. It was felt that before this Commission could adequately determine the course of action, that more information will be required.

The Commission members discussed in great detail the activities regarding the current Tort Reform legislation and how the impact of this legislation has affected physician premiums for malpractice insurance.

It was agreed that the members of this Commission should regularly share ideas and concerns affecting their specialty organizations. It was also agreed that specialties, when communicating with Congress and/or members of the state legislature, should combine resources to represent medicine with a single voice. It is not in the best interest of medicine to have specialties sending mixed messages to our elected officials.

The Commission discussed the reimbursement inconsistencies of Medicare intermediaries. HCFA provides each intermediary with guidelines and each intermediary then applies these guidelines in determining the eligibility for physician reimbursement. Specialty representatives cited numerous problems with the Medicare intermediaries in Missouri and after considerable discussion it was agreed that if sufficient interest is expressed in meeting with representatives of the two intermediaries in Missouri, invitations would be extended to them to attend the next Commission meeting.

The Commission members discussed **Resolution #8** — *False and Deceptive Advertising* — considered during the MSMA 1989 Annual Convention. This resolution asked MSMA to adopt a policy that the use of the term "board certified" in advertising, should name the board and whether it is a board recognized by the American Board of Medical Specialties; if the board certification is not a board recognized by the American Board of Medical Specialties or comparable Osteopathic Board, it should be labeled "self-designated." This resolution also called for the MSMA to transmit this policy to the State Board of Registration for the Healing Arts for incorporation into Chapter 334 of the Missouri Statutes. The MSMA Executive Committee recommends that this resolution not be adopted and further recommends that all specialty boards and individual physicians refer to the Board of Registration for the Healing Arts any false, deceptive or misleading advertising or that which advertises superiority of performance of a professional service. The Executive Committee also expressed concern that if this resolution were adopted, the Association could run the risk of antitrust violation and quite possibly invite the scrutiny of the Federal Trade Commission. The MSMA Council tabled **Resolution #8** until the December meeting. It was agreed that this topic would best be resolved by a meeting between interested specialties.

The MSMA uses the specialty members of this Commission to comment on various state-promulgated rules, legislative proposals and individual policy statements concerning their respective specialties. This does provide a close liaison between the various specialty organizations and MSMA.

The next meeting will be held during the MSMA 132nd Annual Convention, April 5-8, 1990, at Tan-Tar-A Resort.

J. Regan Thomas, Otolaryngology, Head and Neck Surgery
Chairman
Michael Loren, *Allergy*
James Alyea, *Anesthesiology*
Joseph Werth, *Dermatology*
Michael L. Weaver, *Emergency Physicians*
Ray Lyle, *Family Physicians*
John Layle, *Internal Medicine*
Paul E. Stohr, *Neurosurgery*
Dave Gearhart, *Obstetrics-Gynecology*
John J. Purcell, *Ophthalmology*
Fred G. McQueary, *Orthopaedics*
David Simon, *Pediatrics*
Clifford J. Ameduri, *Physical Medicine and Rehabilitation*
H. Neal Grannemann, *Pathology*
Bharat Nakra, *Psychiatry*
Richard Heimburger, *Plastic and Reconstructive Surgery*
Julian N. Verde, *Radiology*
Mary H. Helikson, *Surgery* (MSSS)
Robert Bruce, *Thoracic*
Michael J. Chehval, *Urology*
Gregory J. Renner, *Surgery* (ACS)
Robert T. Gibbons, Jr., *Council Advisor*

Committee on Constitution and Bylaws

Committee on Biomedical Ethics — Council on Ethics and Judicial Affairs

Last year, this House of Delegates adopted **Resolution #24** (*A-89*), which called for the establishment of an MSMA Committee on Biomedical Ethics.

In August, 1989, the Executive Committee recommended, and the MSMA Council concurred, that the name of the MSMA Judicial Council be changed to the Council on Ethics and Judicial Affairs, and that the duties described in **Resolution #24** (*A-89*) be assigned to this new council.

In accordance with the MSMA Bylaws, the following amendment to the Bylaws is proposed. (Bracketed material to be deleted; underlined material to be added).

Chapter XIV. {Judicial Council} Council on Ethics and Judicial Affairs

Section A. The {Judicial Council} Council on Ethics and Judicial Affairs shall have original jurisdiction in all questions involving Missouri State Medical Association membership, all controversies arising under the Constitution and Bylaws and under the rules of conduct as outlined in the Bylaws, and controversies between two or more component societies or their members. The {Judicial Council} Council on Ethics and Judicial Affairs shall be the judicial authority of the Missouri State Medical Association and its decisions shall be final. The {Judicial Council} Council on Ethics and Judicial Affairs shall {also} investigate general ethical conditions and matters pertaining to the relations of physicians to one another or to the public and make recommendations to the House of Delegates or the component societies. The Council on Ethics and Judicial Affairs shall be the Association's educational and supportive forum for issues of biomedical ethics.

(Other mentions of the Judicial Council in the Bylaws shall also be changed to read "Council on Ethics and Judicial Affairs." See Bylaws Chapter XIII, Sections 2 and 3.)

The following amendment to the Constitution is also proposed. As set forth in the Constitution, this amendment shall be voted upon at this Annual Convention, then shall lay over for one year. It becomes formally adopted as an amendment upon a second affirmative vote at that time. (Bracketed material to be deleted; underlined material to be added.)

Article VI. {Judicial Council} Council on Ethics and Judicial Affairs

The {Judicial Council} Council on Ethics and Judicial Affairs shall be the judicial body of the Association. It shall consist of five active members nominated by the President and elected by the House of Delegates.

"Half-Year Dues" Membership Category

The MSMA Executive Committee also recommended to the MSMA Council that "half-year" dues be formally established. Further, the Committee encouraged the component medical societies to adopt a similar "half-year dues" policy for their local dues. The Council accepted their recommendations.

It was also recommended that a new dues rate be established for physicians entering their second year of practice. This rate would be 75% of the regular Active dues, or $225 per year. Once again, the Committee recommended that component medical societies adopt a similar policy, offering their physician members in their second year of practice a dues rate of 75% of the regular Active dues.

The following amendments to the Bylaws, which implement these recommendations, are presented (Bracketed material to be deleted; underlined materal to be added):

Chapter X. Dues and Assessments

Section 1. The annual dues of this Association shall be $300, which shall be applicable to each active member of the Association beginning in 1987 and shall be levied per capita on the active members of the component societies; physicians leaving training programs and entering practice for the first time shall be assessed dues of $150 for the first calendar year and shall be Active members; physicians entering their second year of practice shall be assessed dues of $225 for the calendar year and shall be Active members; the per capita levy for Resident members shall be $20 per year; Student members shall be assessed dues of $8 per year; Honor members shall not be required to pay dues. Dues shall be payable on January 1 of the year for which they are levied. Those numbers who join after July 1 of any given year shall be assessd at one-half of their regular dues rate, outlined in this section, for the calendar year in which they join.

E. Richard Graviss
Douglas B. Bogart
Paul B. Anderson
Sivaprasad D. Madduri
Jagadishwar Devkota

Commission on Medical-Legal Affairs

The MSMA Commission on Medical-Legal Affairs met on February 10, 1990, in Columbia, Missouri, with the Medical-Legal Committees of the Missouri Bar Association (MBA) and the Missouri Association of Osteopathic Physicians and Surgeons (MAOPS). The conjoint meeting was called to discuss and act on several issues:

(A) **Interprofessional Code** — The MSMA/MBA/MAOPS Interprofessional Code is a voluntary guide for physicians and attorneys in their interrelated practice. The Code had not been amended in several years and the committees decided there was a need to revise the provisions pertaining to medical records.

Recommendation: The Commission recommends to Council that two paragraphs be added to the Medical Reports Section as follows:

"D. When an attorney seeks only copies of the physician's medical records and is not seeking a narrative or an opinion, then said physician shall charge a reasonable fee for the time involved in record review and for the costs of copying, postage and handling."

"E. Attorneys are encouraged to state the reason for obtaining the record."

(B). **SB 736 — Guardianship Law Revision** — The committees discussed Senate Bill 736 which would revise the existing guardianship laws.

Recommendation: The Commission recommends to Council that the bill should be amended to establish a procedure whereby after an individual has been incapacitated for a period of thirty days or more, his or her parent(s) or guardian may petition the courts to appoint appropriate physicians to determine if and when death-prolonging procedures and life-sustaining treatments can be stopped.

(C) **HB 1216 — Incompetence to Drive** — The committee discussed House Bill 1216 which would require physicians to alert the Department of Revenue when a patient has any disorder which might render him or her incompetent to drive.

Recommendation: The Commission recommends to Council that HB 1216 be opposed. Upon adjournment of the conjoint meeting, MSMA's Commission on Medical-Legal Affairs met to discuss a referral from the 1989 Annual Convention.

(D) **Resolution #7 — Malpractice Testimony**

Recommendation: The Commission recommends to Council that Chapter XI, Section 2, of the MSMA Bylaws satisifies the resolve of **Resolution #7**.

Edmond B. Cabbabe, *Chairman*
Ralph Braunschweig
Michael K. Blank
Edward F. Schlafly, Jr.
Paul Quinn
Chris K. Fotopolous
Mario Coronado
Joseph A. Corrado

Nancy Abdon
Richard J. Gimpelson
Michael D. DePriest
William E. Stricker
Andrew B. Kaufman
Thomas C. Sparkman
Curtis C. Cox

Commission on Continuing Education and Health Manpower

The Commission on Continuing Education and Health Manpower did not meet this year. However, individual members of the Commission have been active.

During 1989, the Commission has approved the following institutions and organizations as a sponsor for Continuing Medical Education (CME): Alexian Brothers Hospital, *St. Louis*; Baptist Hospital, *Kansas City*; Barnes/St. Peters Hospital, *St. Peters*; Buchanan County Medical Society, *St. Joseph*; CMMR County Medical Society, *Moberly*; Doctors Hospital, *Poplar Bluff*; Lutheran Medical Center, *St. Louis*; Ozarks Medical Center, *West Plains*; St. Joseph Health Center, *St. Joseph*; St. Joseph Hospital, *Kansas City*; and St. Mary's Health Center, *Jefferson City*.

The moderator critiques and the program evaluation forms obtained during the Missouri State Medical Association (MSMA) 131st Annual Convention provided meaningful information for specialty program chairmen when planning for the 132nd Annual Convention. These program evaluations also will serve as MSMA's verification that physicians attended the scientific programs.

As a result of the excellent programs, specialties are to be commended for their efforts in presenting programs that appealed to a large number of MSMA members.

The Commission members reviewed the proposed amendment to 4 CSR 150-2.110 Continuing Medical Education, which would permit physicians to use the American Medical Association's Physician Recognition Award or the American Osteopathic Association's Award as proof of compliance with the CME requirements.

The Commission will utilize *Missouri Medicine* to publicize that the MSMA is recognized as an intrastate agency to accredit organizations and institutions desiring to be recognized as a sponsor for CME. Interested organizations and institutions are encouraged to contact the MSMA office to obtain additional information about the process.

John H. Renner, *Chairman*
Michael W. Vannier
Nancy H. Ceaser
Gerald J. Duling
Gerald Bart
Turner L. Minnigerode
George X. Trimble
Raymond O. Frederick

James S. Denninghoff
Robert B. Brigden
William D. Bradshaw
Harry Miller
Purificacion Florendo
Dwight L. Deardeuff
Michael R. Freeman
David Barbe, *Council Advisor*

Commission on Medical Economics, Third Party Medicine, and Governmental Relations

The Commission on Medical Economics, Third Party Medicine, and Governmental Relations met on July 8, 1989, in Jefferson City, Missouri.

The Commission received three resolutions as referred from the 1989 Annual Convention:

A. **Resolution #1** — "Physician Grievance Board"

Recommendation: The Commission recommended to Council that MSMA staff develop a conflict resolution model for application on the local level. The Commission further recommended that said model be fashioned after the proposed "MSMA-HMSS Physician's Conflict Resolution Committee" guidelines which were presented during the meeting of the MSMA-HMSS Executive Committee on April 14, 1989. Staff was instructed to submit the proposed model to the Commission for further study and refining prior to final Council Action.

B. **Resolution #19** — "Restriction on Medical and/or Life Insurance as a Result of Psychiatric Treatments"

Recommendation: The Commission recommended to Council that **Resolution #19** be referred to the Missouri Psychiatric Association for input and evaluation. The Commission further recommended that the Missouri Psychiatric Association consider working with insurance companies to develop a "severity of illness" index to be used to standardize and streamline the evaluation of insurance coverage applicants.

C. **Resolution #23** — "Accountability of Third Party Payer Review Activities"

Recommendation: The Commission recommended to Council that **Resolution #23** be tabled in that the successful implementation of **Resolution #1** should satisfy the resolves of **Resolution #23.**

In further action, the Commission discussed a number of resolutions from the MSMA 1989 Annual Convention which, though referred to other MSMA Commissions, were of interest.

Milamari A. Cunningham,
Chairman
Joe Pryor
Ronald N. Riner
Frederick G. DeFeo
J. Gustavo Nix
Charles W. Chastain
Nicholas F. Robinson

Melvin R. Hayden
John D. Davidson
James J. Bass
Carl Strauss
F. David Muegge
Lewis C. Vollmar, Jr.
Clarence C. Reynolds

Missouri Physicians Health Committee

The Missouri Physicians Health (MPH) Committee met on October 6-7, 1989. In addition to this meeting, Committee members were active responding to requests for program information.

The MPH Committee conducted an Intervention Training Program during the 131st Missouri State Medical Association (MSMA) Annual Convention, April 13-16, 1989, Marriott Pavilion Hotel, St. Louis. This program was well attended.

The Committee has established a working relationship with the Auxiliary to improve spouse referrals to the program and possibly to develop a fundraising activity. The Committee members have approached the medical schools in Missouri to develop programs for impaired medical students and house staff. The professional liability insurance carriers have also been contacted to determine the level of Committee assistance and to solicit financial support from these carriers.

In order to further increase the awareness of the MPH Program, the Committee has contacted the medical staff at all hospitals in Missouri with 200 beds or more to schedule a program regarding the benefits of this program and to begin the fundraising process through this source. Each Committee member expressed a willingness to assist in the presentations to area hospital medical staff. To date, 11 presentations have been made to hospital medical staff, county medical societies and affiliated organizations. An additional nine presentations are scheduled for the near future.

The Committee reviewed the current relapse protocol and determined that it needed to be more specific to address issues that confront the MPH Program, particularly regarding the relationship between the MPH Program, BHA and other mandating agencies. The Policy and Procedure Manual has also been reviewed and minor revisions were suggested to reflect current committee activities.

A bank account was established in St. Louis in order to begin billing $50.00/month administrative fee to participants beginning their 13th month of recovery. Participants who were a part of the program prior to January 1989 will not be billed. Funds will be transferred to the MSMA on a monthly basis. The decision to establish an account in St. Louis is an effort to protect the confidentiality of participants.

The Committee activities have increased dramatically. In December 1988, the MPH Program reported a total of 16 active cases and as of December 4, 1989 there were 49 active cases.

Missouri Physicians Health Program Statistics:

Active Total Participants 1988 = 16
Total New Participants 1989 = 33
# of Active MPH Cases 12/4/89 = 49
MSMA Members = 26
Non MSMA Members = 23 (3 ineligible)
Total New Referrals 1/1/89 - 12/4/89 = 64
MDs in treatment = 2
Cases Pending = 1

There were 31 additional referrals made to the MPH Program during 1989 who did not become participants. These cases could not be acted on due to insufficient information or the referral source was unwilling to follow through. One physician expired during 1989; cause of death is unknown to the MPH Program.

SPECIALTIES

Orthopedics = 2
Emergency Medicine = 7
Neurosurgery = 1
Intern/Resident = 2
Radiologists = 1
Internal Medicine = 7
Psychiatry = 2
Pediatrics = 2
OB/GYN - 2
Cardiology = 2
Family Practice = 1
Ophthalmology = 2
Nephrology = 1
Surgery = 1

REFERRAL SOURCE

Self = 5
Chief of Staff = 5
BHA = 3
Treatment Center = 7
Other State Impaired Physician Program = 1
MPH Participant = 1
Colleague = 7
Private MD = 2
Spouse = 1

Jack Croughan, *Medical Director*
Carl C. Pearman, *Chairman*
Thomas M. Ahmann
Thomas R. Anderson
Hugh C. Bartlett
Jack Carmody
James R. Criscione, Jr.
Edward C. Felker, III
Edward M. Grim
K.P.S. Kamath
David S. Martin
Donald McIntosh
Jo-Ellyn M. Ryall

Committee on Legislative Affairs

The current Session of the Missouri General Assembly has exhibited heightened interest in the area of access to medical care and especially, cost of medical care.

Much as we have witnessed on the national level for several years, state legislators are becoming more acutely aware of measures intended to address changes in the delivery of medical care as have been proposed by various public groups and espoused by the media.

For example, bills introduced before the Missouri Legislature this Session include:

House Bill 1102, which would mandate that physicians accept assignment on all Medicare claims. The bill is still in committee but is a "priority issue" of the Silver Haired Legislature and the AARP.

House Bill 1127, which would establish a Canadian-type Universal Health Care System in Missouri. The bill has a $7 billion fiscal note, but received wide-spread support in public testimony. A substitute for HB1127, which would establish a Task Force to study the universal system and report back to the Legislature with recommendations, will soon be debated by the House.

- Several bills have been introduced that would require cost data reporting by hospitals. These bills also contain provisions that would identify physicians providing medical services in the hospitals.
- In the area of access, MSMA has been successful in assisting efforts to increase Medicaid payments for OB care in hopes that more physicians will provide care to poor mothers and infants.
- Bills are currently proceeding through the Legislature to meet federal mandates that require Medicaid services to mothers and infants up to 133% of the federal poverty level.

House Bill 998, which would establish a state-operated high-risk insurance pool for individuals who cannot acquire coverage due to health conditions, has passed the House and is waiting Senate action.

The MSMA is currently monitoring to varing degrees, more than 200 bills in the General Assembly. These range from bills on worker's compensation to medical research animals to nurse student loans to Medigap insurance, etc. Some of the bills on which the Association has been most active are:

House Bill 1055, which would establish a Clean Indoor Air Act for non-smokers. The bill is awaiting full House debate.

House Bill 1216, which would require physicians to report to the Department of Health the names of patients who have a condition that might cause lapses of consciousness. These names would then be forwarded to the Drivers' License Division to determine the patient's ability to drive. MSMA pointed out several problems with the bill and it remains in committee.

House Bill 1330, which would place added regulations on HMOs and bring PPOs under state regulation for the first time. The House should debate this bill soon.

House Bill 1365, which would exclude other professions (except physicians) from advertising that they provide physical therapy services. Bill has passed the House.

House Bill 1702, which would legalize the practice of "lay midwifery" in Missouri. MSMA has been able to keep this bill in committee but some legislators who have been long-time friends of medicine are warning that if physicians are not going to deliver babies, then "someone" else will.

House Bill 1579, which would require utilization reviewers, is still in commmittee. MSMA is working with insurers, legislators and others to develop a bill to place reasonable restictions on reviewers while recognizing that medicine favors good utilization review.

Senate Committee Substitute for SB 508, which would permit a person to appoint a Health Care Surrogate to make medical decisions if the person became incapacitated, remove the restrictions on nutrition and hydration in the state's Living Will statutes and change the state's guardianship laws, drew strong opposition from the Missouri Catholic Conference and the Missouri Right-to-Life Coalition and is considered "dead" for the Session. An abbreviated version, however, may surface later.

Senate Bill 737, which was aimed at permitting the Board of Healing Arts to define the practice of medicine and strengthen statutes regarding protocols and written orders, was amended to delete the Board's power to define medicine. It has received first-round approval in the Senate.

Senate Bill 819, which was introduced at the request of MSMA to permit HIV testing of certain patients without their consent when a physician believes the patient may have exposed a health care worker providing care, is still in committee.

Senate Bill 850, which would place some restrictions on tanning parlors, was introduced late but is on the Senate calendar for later consideration.

The preceding offer only a brief glimpse of the many important issues the Missouri General Assembly considers each year. And, each year, your Committee on Legislative Affairs pleads with you to become involved in the political process that determines the outcome of these measures.

Our Legislative "Key Contact" Program is effective with those legislators who have "Contacts," but more then 60 lawmakers do not have a "Key Contact."

Our Physician Involvement Program (PIP) is growing, but we are not getting physician representation for most legislators.

This is an election year! Now is the time for physicians to prepare for future Sessions of the General Assembly by getting to know the candidates, supporting the candidates of their choice and then informing legislators on medicine's viewpoints.

Remember, the greatest impact you can have on a candidate is to help them! The greatest impact you can have on a lawmaker is to contact them!

John I. Matthews, *Chairman*
Marvin A. Singleton
Gary A. Dyer
Dorothy D. Reister
Norman P. Knowlton, III
Melvin C. Kasten
Jerry Murrell
Michael L. Craighead
Harry L. Knopf
Frederick W. Hahn
Daniel F. O'Sullivan
Mrs. Charles Barbee
Mrs. John Hunkeler
Mrs. Tom Sparkman

Committee on Planning

Recommendations of the Committee on Planning, from the meeting held March 3, 1990:

1. Requested Missouri State Medical Association to publish in *Missouri Medicine*, a single line explanation of the violated Missouri statutes under disciplinary actions.
2. Requested intensifying the education of the public, particularly the elderly, in the implication of mandatory assignment coupled with physician licensure. Further suggested an audio-visual presentation of 10-20 minutes to be presented at public forums such as, but not limted to, the VP Fair in St. Louis, the Empire State Fair in Springfield, the State Fair in Sedalia, and the Spirit Festival in Kansas City.
3. Suggested that component societies possibly through hospital cooperation, provide a referral service for those physicians who are non-participating but may accept assignment of Medicare benefits on an individual basis.
4. Requested the Missouri State Medical Association poll all legislators in the State of Missouri with the following questions: (a) who do you ask about health related issues? and (b) what physicians, if any, do you know personally?
5. Requested the Missouri State Medical Association conduct teaching seminars in individual teaching hospitals throughout the state for residents completing their training, to provide information regarding practice start-up, financial planning, tax planning, etc.
6. Requested the Missouri State Medical Association provide all hospital medical staffs with model by-laws and rules and regulations regarding privileges for allied health professionals.
7. Requested that the Council appoint an Ad Hoc Committee to study the present insurance regulations and enforcement provisions with a goal of outlining legislation to define, standardize, and oversee health insurance provider programs in the State of Missouri.

Phillip M. Hornbostel, *Chairman*
Carl Kruse
Robert R. MacDonald, Jr.
Douglas Paone
Dan T. Sullivan
Bruce Preston
Sam L. Farrell
Stephen C. McCray
Charles E. DeFelice
Victoria Gunn

Registration of the 132nd Annual Convention

First Councilor District - 7

Richard Bowles, Liberty
Robert Schaaf, Gower
Charles Siegel, Gladstone
Richard Walsh, St. Joseph
Helen Nguyen, St. Joseph
Robert Weigand, St. Joseph
Ed Bare, Tarkio

Third Councilor District - 80

Roland Abada, St. Louis
Archibald Ahern, St. Louis
Farid Azzam, Chesterfield
Robert Baglan, St. Louis
James Blythe, St. Louis
Robert Bonsanti, Bridgeton
Dan Brennan, St. Louis
Michael Brunt, St. Louis
John Buettner, St. Louis
Edmond Cabbabe, St. Louis
J. William Campbell, St. Louis
Carmelito Caronongan, Cairo, Ill
John Carrier, Ballwin
Michael Chehval, St. Louis
Manual Comas, Manchester
Ruth Comens, St. Louis
Jack Croughan, St. Louis
Rand Dankner, Chesterfield
Tony Deeths, St. Louis
Jonathan Dehner, St. Louis
V. Rao Devineni, St. Louis
Ananda DeSilva, Florissant
Charles Edwards, Moberly
Ronald Evens, St. Louis
Mariano Floro, Florissant
Melissa Fogelman, St. Louis
Waldo Forsman, St. Louis
Michael Gabel, St. Louis
John Galanis, Chesterfield
August Geise, Chesterfield
James Haddock, Webster Groves
William Hart, Jr., St. Louis
William Huffaker, Maryland Heights
William Hummel, St. Louis
Ray Jablonski, St. Louis
James Junker, St. Louis
Michele Kemp, Chesterfield
Roger Khouri, St. Louis
Harry Knopf, Clayton
Raymond Knowles, St. Louis
Phillip Korenblat, St. Louis
Bruce Kraemer, St. Louis
John Krieger, St. Louis
Carl Kruse, Palmyra
Steven Lauter, St. Louis
William Lewin, St. Louis
Lawrence Lewis, St. Louis
Robert Lewis, St. Louis
J. Otto Lottes, St. Louis
Robert MacDonald, St. Louis
William MacDonald, St. Louis
David Martin, Chesterfield
Michael McCaddan, St. Louis
William McGinnis, Chesterfield
Arturo Montes, Florissant
Christopher Moran, St. Louis
K. Lynne Moritz, St. Louis
Bharat Nakra, St. Louis
William Owens, St. Louis
Russell Palmer, Palmyra
Flavius Pernoud, III, St. Louis
Frederick Peterson, St. Louis
Paul Petruska, St. Louis
Stephen Polmar, St. Louis
Lee Portnoff, St. Louis
John Powell, St. Louis
John Purcell, Jr., St. Louis
J. Michael Ribaudo, St. Louis
John Schoentag, St. Louis
John Schweiss, St. Louis
Donald Sessions, St. Louis
Herbert Shapiro, St. Louis
John Shields, St. Louis
Peter Smith, St. Louis
Donald Spalding, St. Louis
George Steinhardt, St. Louis
John Stith, St. Louis
Paul Stohr, St. Louis
Dan Stuart, Brunswick
James Thompson, Hazelwood
Robert Tompson, Moberly
J. Nick Verde, St. Louis
Lewis Vollmar, Jr., St. Louis
Bruce Walz, St. Louis
William Webber, St. Louis
Philip Weyman, St. Louis
David Wilkinson, St. Louis
Carol Williams, St. Louis

Fourth Councilor District - 7

J. Michael Conoyer, St. Peters
Michael Curry, St. Charles
Philip Dean, Washington
Ferdinand Del Pizzo, St. Charles
Sammy Farrell, Washington
William Richardson, Union
Howard Short, Washington

Fifth Councilor District - 38

Edgar Ailor, Columbia
Philip Anderson, Columbia
Bradley Arthaud, Columbia
Charles Barbee, Columbia
Lester Bryant, Columbia
Lucinda Buescher, Columbia
James Butt, Columbia
Donald Cole, Columbia
James Daly, Columbia
Walter Davisson, Jefferson City
John DeSpain, Columbia
Herbert Ferrari, Columbia
Robert Fisher, Columbia
Jerry Foote, Columbia
George Fuchs, Columbia
Mary Helikson, Columbia
Lawrence Henry, Jefferson City
Jem Hof, Columbia
Elvin Imes, Columbia
Dennis Knudson, Columbia
Debra Koivunen, Columbia
Leo Landhuis, Columbia
Darnell Martin, Columbia
Frank Mitchell, Columbia
Mary Mullen, Mexico
Eric Murray, Jefferson City
Dean Nierling, Columbia
Lora Plattner, Columbia
james Roller, Columbia
David Scherr, Jefferson City
Johannes Schokker, Jefferson City
Kenneth Siu, Jefferson City
Chris Southwick, Columbia
Michael Szewczyk, Columbia
Robert Tanner, Jefferson City
Bruce Weaver, Columbia
Joe Werth, Jefferson City
Susan Zurowski, Columbia

Sixth Councilor District - 5

John Boyce, Sedalia
Robert Magee, Eldorado Springs
T. Reed Maxson, Warrensburg
Robert Pavlu, Carrollton
Gus Wetzel, Clinton

Seventh Councilor District - 33

Ben Abella, Belton
Jim Anthony, Stillwell, KS
Robert Breckenridge, Kansas City
Terry Calhoun, Kansas City
Alfred Caruso, Kansas City
Steven Charapata, Kansas City
Ken Davidson, Leawood, KS
Don Fortin, Kansas City
Stephen Gordon, Kansas City
Donald Griffin, Prarie Village, KS
Robert Gunnoe, Kansas City
Dallas Johnson, Kansas City
Donald Kuenzi, Kansas City
Angelo Lapi, Shawnee Mission, KS
James Lonergan, Kansas City
Michael Loren, Independence
B. J. Melia, Jr., Kansas City
John Mitchell, Kansas City
Robert Morantz, Kansas City
Richardson Noback, Kansas City
Andy Pavlovich, Kansas City
Walter Peterson, Kansas City
Larry Piebenga, Kansas City
Michael Porter, Mission Hills, KS
Fred Roberts, Kansas City
Felix Sabates, Kansas City
Carl Stout, Jr., Independence
Eric Swanson, Kansas City
Benesto Tumanut, Kansas City
James Willoughby, Liberty
Donald Youll, Kansas City
James Youngblood, Kansas City

Eighth Councilor District - 25

Saad Al-Shathir, Joplin
Jack Bagby, Jr., Springfield
Ronald Benson, Springfield
Mac Bonebrake, Springfield
Jordan Burkey, Springfield
Ramona Chapman, Joplin
Raymond Christy, Springfield
Michael Clarke, Springfield
John Clouse, Springfield
Wenceslaus Dias, Bolivar
Charles Glazzard, Springfield
Paul Hilton, Joplin
Collyer Kelling, Springfield
James Key, Springfield
Wayne Miles, Springfield
Jay Milne, Springfield
Aly Mohsen, Springfield
Gene Morrow, Springfield
Carl Pearman, Springfield
Craig Peterson, Springfield
Bill Prater, Springfeild
Howard Roberts, Joplin
Wayne Shelton, Springfield
Jerry Wible, Springfield
Leo Wyrsch, Springfield

Ninth Councilor District - 11

James Bass, Rolla
Barry Bass, Rolla
Daniel Campbell, Jr., Mount Vernon
William Dickerson, Osage Beach
Roger Francis, Osage Beach
Robert Huster, Rolla
Anita Isaac, Ash Grove
Van Stoecker, Rolla
Mark Vandewalker, Waynesville
Joe Wall, Houston
David White, Lake Ozark

Tenth Councilor District - 10

Jean Chapman, Cape Girardeau
David Clark, Cape Girardeau
Robert Dettmer, Ironton
W.A. Joja, Poplar Bluff
Christopher Jung, Cape Girardeau
Ernest Levenson, Poplar Bluff
Ina Levenson, Poplar Bluff
Suwan Phanijphand, Poplar Bluff
C. John Ritter, Cape Girardeau
J. Stephen Whitten, Cape Girardeau

St. Louis University Student Medical Society - 3

Mark Cunningham
Melissa Fogelman
Robert Swanson

University of Missouri - Columbia Student Medical Society - 1

Nancy Clore

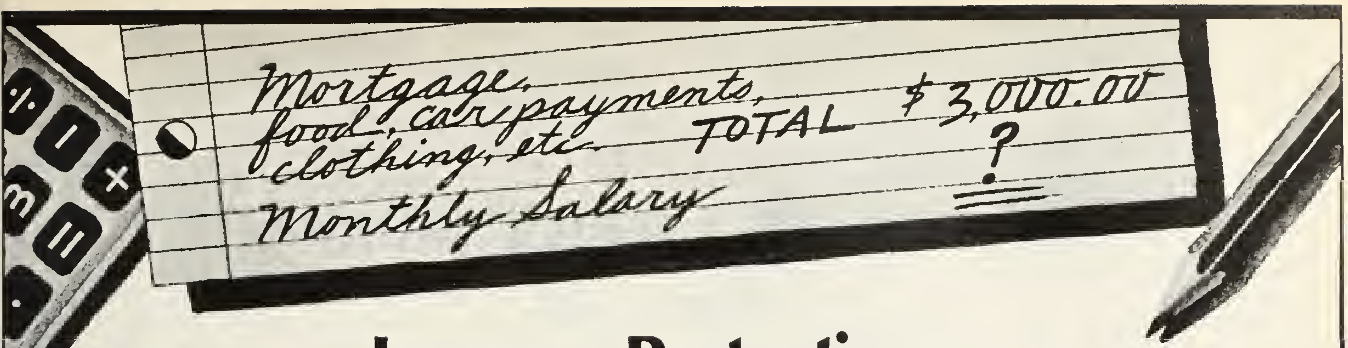
University of Missouri-Kansas City Student Medical Society - 1

James R. Allen

Guest Physicians - 80

Eleanor Abada, St. Louis
L. Abichandain, Chesterfield
Luis Acosta, Fort Leonardwood
Susan Ailor, Columbia
A. G. Alias, Farmington
Edward Berry, Columbia
John Berry, Kansas City, KS
Richard Bowles, Jr., West Plains
Charles Brielmaier, Chesterfield
Brad Buchanan, West Plains
J. H. Cason, Jefferson City
Rochelle Catus, St. Louis
Evan Crandall, St. Louis
Mel Clark, Kansas City
William Colantoni, Jr., Davenport, IA
Seth Crosby, St. Louis
David Dabell, St. Louis
R. Dacey, St. Louis
Deanna DaComb, O'Fallon, Ill
Ray Davis, St. Louis
Jonathan Davidson, Durham, NC
Uday Desai, Kansas City
John Duff, Rogersville
Boni Elewski, Cleveland, OH
Ronald Ellis, Springfield
Marvin Feldman, Jefferson City
Jon Gates, Burlington, IA
David Gearhart, Creve Coeur
William Gillespie, Louisville
Thomas Hart, Columbia
S. T. Hausher, Poplar Bluff
Kevin Hill, Columbia
J. F. Huddleston, Atlanta, GA
W. A. Huja, Poplar Bluff
John Iacobucci, St. Louis
Brian Johnson, Columbia
Kevin Komes, Fulton
Michael Korenfold, Columbia
Lincoln Krochmal, Buffalo, NY
Joseph Malters, Columbia
Bruce MacFadyen, Houston, TX
Brad Marrs, St. Charles
Dennis Martin, Stilwell, KS
Jesus Medina, Oklahoma City, OK
Beverly Murrell, Columbia
Jeff Nerad, Iowa City, Iowa
Carl Niclsen, Webster Groves
Joseph Painter, Chicago, IL
Tereasa Parks-Thomas, St. Louis
Jay Pate, Columbia
George Paulson, Columbus, Ohio
Joan Pernoud, St. Louis
Ila Peterson, Overland Park, KS
Carl Peterson, Kansas City
Karen Priskell, Kansas City, KS
Gene Ridenhour, Columbia
Alton Rubach, Fulton
Jon Rupright, Jefferson City
Dennis Schaberg, Ann Arbor, MI
Joram Seggev, Milwaukee, Wisconsin
R. Shatz, Osage Beach
William Sholes, St. Louis
Carla Skibba, Columbia
Ernest Skidmore, Columbia
Wes Stricker, Jefferson City
William Swartz, New Orleans, LA
Ron Swinfard, Columbia
Ellis Taylor, St. Louis
Mark Thoman, Des Moines, IA
Jim Thompson, Bemidji, MN
Vance Thompson, Columbia
V. D. Vandiver, Lake Ozark
E. J. VanScott, Abington, PA
Fe Villarante, Hays
Rene Wedig, Columbia
Tom Weigand, St. Joseph
Douglas Whitley, Overland Park, KS
Jonathan Wiens, Kansas City
T. Wilkinson, San Antonio, TX
Joan Wu, Kansas City
Dan Young, Clayton
David Zamierowski, Leawood, KS
Robert Zitsch, Columbia

There were 494 MSMA Members; 80 Guest Physicians; 175 Guests; 99 Auxiliary Members; 161 Exhibitors and 23 Staff Members present. Total registration was 1959.


Mortgage, food, car payments, clothing, etc. TOTAL $3,000.00
Monthly Salary ?

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1-800-445-9513

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Jack M. Moore, Jr.

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Since 1943

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☐ Office Overhead Expense
☐ Hospital Indemnity Plan
☐ Accidental Death & Dismemberment Insurance

Name ______________________

Address ______________________

City ____________ State ____________ ZIP ____________

Phone: (   ) ____________ Best time to call: ____________

Continental Insurance.℠
Commercial Insurance Company of Newark, N.J.
80 Maiden Lane, New York, N.Y. 10038

Summary of Council Minutes
1989 - 90

Meeting of April 16, 1989
Marriott's Pavilion Hotel, St. Louis

Dr. Dorothy Reister was elected chairman of the Council and thereby became the presiding officer. Dr. Carol Williams was elected vice-chairman.

Dr. Norman Knowlton III and Dr. Harry Cole were elected MSMA secretary and MSMA treasurer, respectively.

Dr. Charles Barbee, HMSS Councilor, gave a brief report on the meeting of the Hospital Medical Staff Section.

Meeting of June 3, 1989
Holiday Inn, Lake of the Ozarks

Mr. Royal Cooper reported that renovation and remodeling of the MSMA headquarters building was complete.

He also said the MSMA had filed an *amicus curiae brief*, with others, urging the U.S. Supreme Court to hear the Cruzan case, dealing with forgoing life support.

A discussion of membership issues led to the Council's approval of direct solicitation of members by the MSMA. A membership incentive program of rebates, in place the previous year, was rescinded.

The Councilors also voted to hold the 1993 Annual Meeting March 31 to April 4 at Tan-Tar-A, Lake of the Ozarks.

Following a motion by 3rd District Councilor Dr. William Huffaker, the Council approved the nomination of Dr. James Whittico, St. Louis, for the *AMA Benjamin Rush Award*.

Dr. Marvin Singleton recommended that certain agencies and organizations, including the Departments of Health and Social Services, and the Silver Haired Legislature, be approached for their ideas on various medical issues. The Council approved his recommendation. Acting on a second recommendation, the Council also voted to have the Task Force on Membership Benefits study member benefit plans, especially in regard to their exclusivity. A report was to be made in August.

Dr. Gary Dyer presented his Charity Care Program to the Council. The program, based on a resolution from the 1989 House of Delegates, calls for the tabulation of physicians' hours of charity care per year. The Council approved the implementation of the plan.

The Council also agreed to study the feasibility of conducting screening clinics at the State Capitol.

On a communications matter, the Council voted to remove *Progress Notes* from the front pages of the journal, to be published as a freestanding newsletter on a monthly basis.

Council meeting dates were also discussed and changed from a Friday-Saturday format to a Saturday-Sunday format.

Dr. Jerry Murrell reported that 101 physicians participated in PIP. He also presented a report from the PRO.

Other reports were presented from the Committee on Legislative Affairs, the Caring Foundation of St. Louis, the MMPAC, the Committee to Preserve Health Care, the Physician's Health Committee, and a Conjoint Meeting of the Executive Committees of MSMA, MAOPS & MHA.

The Council approved the following:

●Dr. Reister's motion that the MSMA obtain information from liability carriers regarding the timely filing of expert witness affidavits.

●A resolution from Dr. Stephen Vilmer urging the use of and mandating of a unified coding system for Medicaid claims, based on current Medicare codes.

●Dr. J. Michael Conoyer's motion that the HMSS be directed to study medical staff bylaws provisions concerning disciplinary action by a hospital following Board of Healing Arts action.

Meeting of August 27, 1989
Capitol Plaza Hotel, Jefferson City

Mr. Cooper reported on several topics, including a survey of young Missouri physicians, recently mailed.

Several MSMA members were planning to attend a Washington visit and PAC workshop in October.

He also reported that the U.S. Supreme Court had agreed to hear the Cruzan case.

MSMA has joined several other states in a geographic coalition that will attempt to lobby Congress for relief of the urban/rural disparity in Medicare reimbursement.

Mr. Cooper reported back from the AMA Meeting and a subsequent meeting with the Governor's office and others on MSMA's resolution calling for an increased tobacco tax. Support in the legislature was considered unlikely, and other approaches were being considered.

A follow-up report on the membership drive indicated 170 new members had joined since the previous Council meeting.

The Council gave its approval to a resolution concerning the Association's Prudential-Bache accounts.

Following a report and recommendation from Dr. Singleton, the Council directed the Executive Committee to explore the possibility of using our Honor Members, as a special resource, especially in lobbying activities, or liaison activities with senior citizens groups.

Dr. Barbee reported on the HMSS's discussions with a physician facing summary suspension of his hospital privileges following Board of Healing Arts action. The Council authorized MSMA legal counsel to assist the physician in his attempt to vindicate himself.

Accreditations for several hospitals in the state were approved.

Executive Committee recommendations were considered. The following actions were taken:

- Approved recommendation to change the name and function of the Judicial Council to the Council on Ethical and Judicial Affairs, which would act as an educational and supportive agent in biomedical ethics.
- Approved implementation of a 75% dues category for second-year practice physicians and half-year dues for those joining after June of any given year.
- Tabled consideration of a resolution on "False and Deceptive Advertising," because of the possible antitrust violations inherent in its wording.
- Approved formation of a Medicare Program Ad Hoc Committee, to be made up of the Vice Councilors. Each Vice Councilor would be responsible for identifying individual MSMA members who would be willing to study Medicare programs and then report to the committee.
- Referred to the Judicial Council the question of the constitutionality of "local-only" membership.
- Referred to the Legislative Affairs Committee some proposed legislation on peer review, for its study and report back.

Dr. Singleton reported that there was a vacancy on the Board of Healing Arts. The Council agreed that Dr. Barbee be recommended for the seat.

Dr. Joseph Blanton, a member of the Physician Services Task Force for Missouri Medicaid, presented a report from that group. The Council voted to accept his draft report.

Following a report from the AMA delegation, the Council approved a resolution on drug abuse, to be taken to the AMA Interim meeting in December.

Dr. George Bohigian, unsuccessful candidate for the Board of Trustees in June 1989, announced his intention to run again for the Board seat. The Council endorsed his campaign and approved a $10,000 fiscal note to finance it.

Other reports were heard from the PRO, the MU School of Medicine, the Physicians Health Program, the Committee to Preserve Health Care, the Committee on Legislative Affairs, the Missouri State Medical Foundation, the Commission on Medical Economics, Third Party Medicine and Governmental Relations, and the MMPAC.

Meeting of December 17, 1989
Capitol Plaza Hotel, Jefferson City

On recommendation of the Judicial Council, the Council voted to contact the component societies to advise them that the acceptance of "local-only" memberships is contrary to the MSMA Bylaws.

The Councilors also agreed to endorse the AMA's National Physician Credentials Verification Service.

Acting on recommendation of the Executive Committee, the Council voted to adopt the AMA's position on false and deceptive advertising in lieu of MSMA **Resolution #8** (*A-89*).

The mailing of an information brochure on mandatory Medicare assignment (designed for patients) was authorized. Honor members and active, practicing physician members were to receive copies.

Dr. William Chastain and Dr. Kirby Turner were given Council support for their nominations to the Board of Health and the Board of Healing Arts, respectively.

Several actions taken by the Executive Committee were formally approved, including support for the Department of Health's tobacco conference in 1990; termination of the MSMA Prudential-Bache retirement plan; instituting of an employee deferred compensation plan at no cost to the Association; continuing to provide funding for student delegates to AMA meetings; retention of PruBache for the MSMF Invest In Missouri plan.

The Task Force to Study Membership Benefits reported a series of recommendations, all but one of which were approved. Benefit proposals accepted included those from the Moneta Group, the Fred S. James Company, and Conomikes Associates. A licensing agreement between the MSMA and AMA Advisers was not approved.

A proposal that the Association hold a "Media and Medicine" event, inviting media representatives and health professionals from across the state, was referred to the Executive Committee for study.

Dr. Cole presented the 1990 Budget. It was approved as presented.

A relapse protocol submitted by the Physicians Health Committee was referred to the Executive Committee for study.

Authorization was granted to Dr. Croughan to release budgetary information to PHP donors who requested it. In addition, the Council voted to publish a list of contributors in the journal.

In another action, a 90-day grace period for PHP enrollees to become MSMA members was approved.

Several CME accreditations were approved.

The Committee on Legislative Affairs presented a report containing a number of recommendations. These recommendations, listed here, were approved by the Council: Reactivation of a liaison committee with the Board of Healing Arts; referral of the issue of regulating suntan parlors to the Executive Committee; adoption of a resolution mandating HIV testing in needlestick accidents; endorsement of the Missouri Bar's draft legislation on health care surrogates; endorsement of continued funding for the Missouri Arthritis Program.

On recommendation of Dr. Singleton, the Council agreed to have the Executive Committee study the formation of a candidacy review board for AMA offices.

A report from the Commission on Public Affairs was presented. The Council adopted all its recommendations save one, as outlined here. First, that Honor members of the Association be singled out as liaisons and resources on senior citizen health issues; that a "mini-internship" program be established for legislators and other public figures; and that a single photocopiable page be included in each issue of the journal as a patient information resource for members.

Other reports presented before the Council came from the following: the AMA delegation; Donald Sessions, editor of *Missouri Medicine*; Robert Harmon, director of the Department of Health; George Wohlschlaegre, medical director of the PRO; the MSMA Auxiliary; the Committee to

Preserve Health Care; MOMEDICO; the Young Physicians Section; the Commission on Interspecialty Medicine; and the Physician Involvement Program.

Meeting of January 28, 1990
Capitol Plaza Hotel, Jefferson City

The Council aproved the following three recommendations from Executive Committee:

a)A recommendation that MSMA contact those who have expressed an interest in buying MSMA-owned MOMEDICO stock, saying the question is under evaluation;

b)A recommendation that $40,000 be set aside for professional services in the evaluation of the situation;

c)An authorization of the Executive Committee to vote the MSMA-held Class B stock at any special or regular MOMEDICO stockholders' meeting.

Several other recommendations from the Executive Committee were approved. These included the adoption of a relapse protocol proposed by the PHP; the referral of the "Media and Medicine" event to the Public Affairs Commission; the formation of a 501(c)(3) corporation for the Physicians Health Program, with a fiscal note of $250-$500; the approval of the name of Thomas R. Anderson, M.D., Columbia, for the 1990 Citizenship and Community Service Award; and the approval of the following for legislator awards: Senators Russell and Sharp; Representatives McBride, Treadway, Cooper and Burch.

As a further step to communicating important information to the members, it was decided to include a representative of the Missouri Clinic Managers Association as ex officio member of the Council and the House, and also to add the names of large clinic business managers to the MSMA mailing list.

After discussion, the Council formally endorsed the candidacy of Dr. Robert McQuillan for the AMA Council on Judical and Ethical Affairs.

Following the suggestion of the president that a candidacy screening board be formed, the Council agreed that in the future, all applicants for endorsement be evaluated by the Ad Hoc Candidacy Screening Committee before coming before the Council.

Dr. Singleton appointed a committee consisting of Dr. Singleton, *Chairman*; Dr. Barbara Buchanan, and Dr. Walter German. The Council then voted to submit to the new committee the candidacy of Keith Ashcraft for the AMA Council on Medical Services election in 1991.

The Council heard and approved reports from the Committee on Legislative Affairs, the Committee on Sunsetting, and the Committee to Preserve Health Care, including the CPHC's proposal to appoint a blue ribbon panel to report back on various tort reform issues at the June meeting. Commending Dr. Dyer on his report on the history of tort reform in Missouri, the Councilors voted to place the report in a future issue of *Missouri Medicine.*

The reappointment of Donald Sessions and Ramona Chapman for editor and assistant editor of the journal was approved. CME accreditations for Alexian Brothers, *St. Louis*; Baptist Medical Center, *Kansas City*; Doctors Regional Medical Center, *Poplar Bluff*, were also approved.

Councilors reaffirmed, by a written vote of 9-16, the scheduling of Council meetings on Saturday and Sunday.

Meeting of April 4, 1990
Tan-Tar-A, Lake of the Ozarks

The minutes of the January 28, 1990, meeting were approved as distributed.

Dr. Reister introduced Dr. Joseph Painter, Vice Chairman of the AMA Board of Trustees, who is representing the AMA at our 132nd Annual Convention.

President Singleton asked the Councilors to provide the name of a physician from each Councilor District to serve on the Committee on Nominations.

Dr. Singleton reminded all those present that all MSMA Officers, Councilors, Vice Councilors, AMA delegates and alternates, and PAC Board members should be Sustaining PAC members.

Dr. Singleton reported that the Executive Committee has taken the following actions since the last Council meeting: 1) disapproved MSMA participation in the Mid-America Conference on the 1991 Budget; 2) approved joining the Access to Health Care Coalition; 3) agreed to postpone discussion with component medical societies concerning "local-only" membership until after the Annual Convention; and 4) approved revised agreement with Moneta.

The Ad Hoc AMA Candidacy Screening Committee aproved Dr. Ashcraft's campaign for the AMA Council on Medical Services in 1991.

Council approved the reappointment of the Publications Committee for 1990-91. Committee members are: Drs. Donald G. Sessions, *Chairman*; Ramona Chapman, *Vice Chairman*; Jack J. Curtis, John S. Daniels and Stephen Hamburger.

Mr. Royal O. Cooper reported that there will soon be two vacancies on the Missouri State Mental Health Commission and asked the Council for nominations for these appointments. He further reported that Dr. William Chastain of Farmington has been appointed by the Governor to serve on the State Board of Health.

The MSMA made a contribution to the Missouri State Medical Foundation in the memory of Dr. Doyle C. McCraw, MSMA President in 1969-70, who passed away recently.

The 1990s dues collections were reported to be on course for this time of year. MSMA has now formed a corporation so that the Physicians Health Committee can receive funds. The MSMA is in the process of applying for a 501(c)(3) designation from the IRS.

The Council approved a recommendation by Mr. Cooper that the Executive Committee, Dr. Singleton, and himself attend the Annual Meeting of MOMEDICO held in May, 1990, and vote MSMA proxies and attend the annual meeting of stockholders and Board of Directors.

The Council heard reports from the following: Conjoint Meeting of the Medical-Legal Committee of MSMA, Missouri Association of Osteopathic Physicians & Surgeons, and the Missouri Bar Association; Committee on Planning; Commission of Medical Economics, Third Party Medicine & Governmental Relations; AMA delegation.

The Council also approved two resolutions outlined by Dr. George Bohigian.

■

Missouri State Medical Foundation

Friday, April 6, 1990
Tan-Tar-A Resort
Lake of the Ozarks, Missouri

Board of Trustees

The Annual Meeting of the MSMF Board of Trustees was called to order by Miles C. Whitener, M.D., president. The following slate of officers was nominated from the floor and elected by acclamation:

President — Miles C. Whitener, M.D., *St. Louis*
Vice President — Frederick W. Hahn, M.D., *St. Louis*
Secretary/Treasurer — Robert H.Tanner, M.D., *Jefferson City*
Assistant Secretary — Sidney A. Dulle, CPA, *MSMA Staff*

The following physicians were elected to the MSMF Board of Trustees for five-year terms:

Larry Courter, M.D., *Osage Beach*
Robert Schaaf, M.D., *Gower*

The Foundation received contributions totalling $5,766.00. No assessment was received from the Missouri State Medical Association in 1989.

There being no old or new business, the meeting was adjourned.

MSMF Annual Meeting

The Annual Meeting of the Missouri State Medical Foundation was called to order by Miles C. Whitener, M.D., president. The minutes of the 1989 Annual Meeting were approved as published in the July 1989 issue of *Missouri Medicine*. For the 1989-90 academic year, the Foundation awarded $193,000 in loans.

Regarding old business, Michael G. Grimes from Prudential-Bache Securities, identified the following problems: 1) lack of knowledge; misconceptions of what this program is; 2) lack of peer pressure; and 3) dollar amount appears to be deterrent. Mr. Grimes suggested the appointment of a committee to monitor the program on a quarterly basis. It was recommended that the minimum be lowered from $5,000 to $300. It was also recommended that this become a recognition program, where contributors be recognized during the annual meeting or be published in *Missouri Medicine*.

After discussion, the Board aproved to lower the minimum to $300. Next, the Board approved to have a quarterly meeting and to establish some form of recognition for the contributors of the program.

Under new business, a resolution for Dr. Franklin's time and dedication to the Foundation was accepted by acclamation.

The meeting was then adjourned.

■

132nd Annual Convention Exhibitors

Adria Laboratories
Columbus, Ohio
Advanced Medical Data Systems
Kansas City
Baird, Kurtz & Dodson
Springfield
Benchmark Computer Systems, Inc.
Overland Park, KS
Blue Cross & Blue Shield of Missouri
St. Louis
Boehringer Ingelheim Pharmaceuticals, Inc.
Ridgefield, CT
Bristol Laboratories
Evansville, IN
CardioResources, Inc.
Kansas City
Charter Hospital
Columbia
CIBA Pharmaceuticals
St. Louis
Clear Pointe
Lake Ozark
Datex Medical Instrumentation, Inc.
Tewksbury, Mass.
Disability Determination/SSA
Jefferson City
Esch Information Systems, Inc.
Springfield
Financial Planning Partners, Ltd.
Mission, KS
GTE
Columbia
Glaxo, Inc.
Overland Park, KS
HPSG
Arnold
HWA International
Memphis, TN
International Medical Electronics, Ltd.
Kansas City
The Key Company
St. Louis
Magnum Charge/Lazer Lites
Stilwell, OK
Mead Johnson Pharmaceuticals
Evansville, IN
Medical Defense Associates
Springfield
Medical Interiors
Memphis, TN
The Medical Protective Company
Fort Wayne, IN
Midwest Medical Supply, Inc.
St. Louis
Missouri Medical Insurance Company
St. Louis
Missouri Rehabilitation Center
Mount Vernon
Moneta Group, Inc.
St. Louis
PIE Mutual Insurance Company
Cleveland, Ohio
Parke-Davis
Morris Plains, NJ
Risk Control Associates, Inc.
Springfield
W.B. Saunders Co.
Leawood, KS
Searle
Shawnee, KS
Sedgwick James of Missouri
Clayton
Schering Corporation
Kenilworth, NJ
Schering-Dermatology
Webster Groves
SmithKline & French Laboratories
St. Louis
Smith Kline & French Laboratories
Philadelphia, PA
Southtown Medical & Hospital Supply, Inc.
St. Louis
E.R. Squibb and Sons
Jefferson City
Summit Pharmaceuticals
Columbia
U.S. Air Force Reserve
Dobbins AFB, GA
U.S. Army Medical Department
Fall Church, VA
The Upjohn Company
St. Louis
Wyeth-Ayerst Laboratories
Philadelphia, PA

In lieu of an exhibit, the following firm has made a cash donation to assist in the sponsorship of the Scientific Sessions:

Eli Lilly and Company — Pharmaceutical Division
Indianapolis, IN

Continuing Medical Education

The continuing medical education accreditation program of the MSMA has full approval by the AMA's Council on Medical Education. The institutions and functions listed here qualify for Category I credit for the AMA Physician's Recognition Award. All accredited institutions in Missouri are invited to send this information for listing in MISSOURI MEDICINE. Please remember to include the name of the individual who can be contacted at your institution for additional information about your CME events.

July

10 - 12 **Transesophageal Echocardiography Course** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: Kathleen Habermehl, Continuing Medical Education, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8897.

12 - 13 **Advanced Trauma Life Support (ATLS) Provider Course** — Location: Texas A&M University, Temple, TX. Contact: Charlene E. Lee, Office of Continuing Medical Education, Scott and White, 2401 South 31st Street, Temple, TX 76508. 817/774-3197.

16 - 17 **Advanced Cardiac Life Support (ACLS) Provider Course** — Location: Texas A&M University, Temple, TX. Contact: Charlene E. Lee, Office of Continuing Medical Education, Scott and White, 2401 South 31st Street, Temple, TX 76508. 817/774-3197.

18 **John Kendig Neuroscience Lecture Series** — Location: St. John's Mercy Medical Center, von Gontard Conference Center, St. Louis, MO. Contact: Judith L. O'Guin, St. John's Mercy Medical Center, 615 South New Ballas Rd., St. Louis, MO 63141-8221. 314/569-6290.

19 - 22 **KU Summer Medical Symposium — Medicine For the Practicing Physician** — Location: Broadmoor Hotel and Convention Center, Colorado Springs, CO. Contact: Andrea Shaw, University of Kansas Medical Center, Office of Continuing Education, Rainbow and Olathe Blvds., Kansas City, KS 66103. 913/588-4480.

25 **John Kendig Neuroscience Lecture Series** — Location: St. John's Mercy Medical Center, von Gontard Conference Center, St. Louis, MO. Contact: Judith L. O'Guin, St. John's Mercy Medical Center, 615 South New Ballas Rd., St. Louis, MO 63141-8221. 314/569-6290.

28 - Aug 3 **Advanced Otolaryngic Allergy** — Location: Tamarron Golf and Tennis Resort, Durango, CO. Contact: James W. Willoughby, M.D., Director, Missouri Postgraduate Course in Allergy, Inc., Suite A, 24-26 South Main Street, Liberty, MO 64068. 816/781-0902.

August

1 **John Kendig Neuroscience Lecture Series** — Location: St. John's Mercy Medical Center, von Gontard Conference Center, St. Louis, MO. Contact: Judith L. O'Guin, St. John's Mercy Medical Center, 615 S. New Ballas Rd., St. Louis, MO 63110. 314/569-6290.

3 **Infectious Disease in the 90's** — Location: Research Medical Center, Kansas City, MO. Contact: David L. Smith, M.D., Research Medical Center, 2316 East Meyer Blvd., Kansas City, MO 64132. 816/276-4306.

3 - 4 **Management of Non-Unions and Orthopaedic Infections** — Location: Ritz-Carlton Hotel, St. Louis, MO. Contact: Cathy Caruso, Office of Continuing Medical Education, Washington University School of Medicine, 660 S. Euclid, Box 8063, St. Louis, MO 63110. 314/325-9862.

5 - 10 **Ninth Annual Internal Medicine Review For the Primary Care Physician** — Location: South Padre Hilton Resort, South Padre Island, TX. Contact: Charlene E. Lee, Office of Continuing Medical Education, Scott and White, 2401 South 31st Street, Temple, TX 76508. 817/774-2350.

23 **Thomas F. Maher Lecture in Radiology** — Location: St. John's Mercy Medical Center, von Gontard Conference Center, St. Louis, MO. Contact: Judith L. O'Guin, St. John's Mercy Medical Center, 615 S. New Ballas Rd., St. Louis, MO 63141-8221. 314/569-6290.

September

10 **19th Annual Wendell G. Scott Lecture: The Relative Value of Radiology** — Location: Mallinckrodt Institute of Radiology, St. Louis, MO. Contact: Ronald G. Evens, M.D., Mallinckrodt Institute of Radiology, 510 S. Kingshighway, St. Louis, MO 63110. 314/362-7100.

September

11 - 13 **Introduction To Doppler Echocardiography** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: Kathleen Habermehl, Continuing Medical Education, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8897.

14 - 15 **Dermatology** — Location: Holiday Inn Executive Center, Columbia, MO. Contact: Barry Kling, University of Missouri-Columbia School of Medicine, Office of Continuing Education, MA215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

17 - 19 **Memory Function in Aging and Aging Related Changes Symposium** — Location: Clarion Hotel, St. Louis, MO. Contact: Ms. Carolyn Leach, Conference Secretary, VA Medical Center, GRECC(111G-JB), St. Louis, MO 63125. 314/894-6510.

October

5 - 6 **33rd Annual Alumni Weekend** — Location: CME Auditorium, MA217, University of Missouri School of Medicine, Columbia, MO. Contact: Barry Kling, Office of Continuing Education, MA 215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

19 **Rheumatology 1990** — Location: Lodge of the Four Seasons, Lake Ozark, MO. Contact: Barry Kling, University of Missouri-Columbia School of Medicine, Office of Continuing Education, MA215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

19 - 21 **Missouri Chapter of American College of Physicians and Missouri Society of Internal Medicine, Regional Meeting** — Location: Lodge of the Four Seasons, Lake Ozark, MO. Contact: Mary Ann Morris, P.O. Box 1953, Lee't Summit, MO 64063. 816/525-5800.

26 - 27 **Black Health Care** — Location: Allis Plaza Hotel, Kansas City, MO. Contact: Barry Kling, University of Missouri-Columbia School of Medicine, Office of Continuing Education, MA215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

November

1 - 3 **Clinical Allergy for the Practicing Physician** — Location: Ritz-Carlton Hotel, St. Louis, MO. Contact: Cathy Caruso, Office of Continuing Medical Education, Washington University School of Medicine, 660 S. Euclid, Box 8063, St. Louis, MO 63110. 314/325-9862 or 362-6893.

November

1 - 3 **68th Annual Fall Conference** — Location: Ritz-Carlton Hotel, Kansas City, MO. Contact: Linda F. Smutz, Kansas City Southwest Clinical Society, 7920 Ward Parkway, Suite 205, Kansas City, MO 64114. 816/523-3383.

9 - 10 **OB-GYN Update** — Location: Holiday Inn Executive Center, Columbia, MO. Contact: Barry Kling, University of Missouri-Columbia School of Medicine, Office of Continuing Education, MA215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

9 - 11 **16th Annual Symposium: Anesthesia and the Geriatric Patient** — Location: Marriott Pavilion Hotel, One Broadway, St. Louis, MO. Contact: S. Mark Poler, M.D., Geriatric Symposium, Dept. of Anesthesiology, Box 8054, Washington University School of Medicine, 660 S. Euclid, St. Louis, MO 63110. 314/362-6973.

25 - 28 **Clinical Allergy — Inhalant and Food Sensitivity "Review and How-To"** — Location: Ritz-Carlton Hotel, Kansas City, MO. Contact: James W. Willoughby, M.D., Director, Missouri Postgraduate Course in Allergy, Inc., Suite A, 24-26 South Main Street, Liberty, MO 64068. 816/781-0902.

Now Available

Catalog of Audiovisual Programs: A Resource Guide for Teaching and Continuing Medical Education

Produced under the auspices of the Office of Educational Resources' AV Library at the University of Missouri-Kansas City, this 6th edition describes more than 2,500 programs in the UMKC Audiovisual Library collection. Each program title is listed with an abstract, author, copyright date, media format, producer, and other pertinent information. All titles are cross-referenced in a subject specialty index and a User's Guide provides information concerning policy and services.

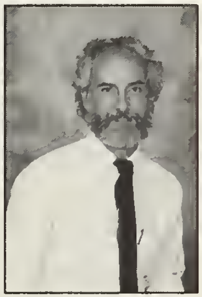
If you are a physician faculty member at UMKC, and are interested in obtaining accredited continuing medical education on video, the new catalog describes the procedure for aquiring AMA Category I CME credit free of charge through the AV Library. A one week rental rate of $10.00 per program is available for physicians residing in the state of Missouri. There is also a $12.50 fee for the catalog.

All inquiries should be addressed to UMKC School of Medicine, AUDIOVISUAL LIBRARY, 2411 Holmes St., Kansas City, MO 64108-2792, or call 816/276-1864 or 276-1832. **Note: The catalog is available to all physicians, but to obtain CME credit, you must be a physician faculty member at UMKC.**

Medical School News

St. Louis University

■ **Mark F. Jacquin, Ph.D.**, professor of anatomy and neurobiology, St. Louis University School of Medicine, has received a five-year, $3.2 million renewal grant from the National Institute of Dental Research of the National Institutes of Health. The program project award will allow Dr. Jacquin and his associates to study the mechanisms of damage-induced trigeminal reorganization.


Mark F. Jacquin, Ph.D.

Dr. Jacquin's group will seek to understand how nerve injury alters cell growth factors that cause some cells to regenerate and other cells to die. This research team will also address injury-induced effects upon axon sprouting, response properties and pattern formation.

Dr. Jacquin joined St. Louis University School of Medicine in 1987.

■ In an effort to investigate airborne asbestos-related and other occupational lung diseases in the metropolitan area, the *Irving J. Selikoff Occupational Medicine Fund* has been set up through St. Louis University Medical Center's division of pulmonology. The initial $500,000 endowment is being established to further research on the causes and treatment of occupational diseases, specifically asbestosis (a scarring process in the lung) and its associated disorders. The program is expected to begin this winter. In conjunction with the research fund, the division has been renamed the division of pulmonology and pulmonology occupational medicine.

Irving J. Selikoff, M.D., is professor emeritus at Mt. Sinai School of Medicine of the City University of New York. His pioneering study of asbestos workers in New York and New Jersey is credited with alerting the public to the dangers of asbestos use.

■ **Andrew J. Lonigro, M.D.**, professor of internal medicine and pharmacology and director of the division of clinical pharmacology at St. Louis University School of Medicine, was the recipient of the first *St. Francis of Assisi Research Award* for excellence in biomedical research.

The award was made during the first Biomedical Research Awards Program at St. Louis University Medical Center in April. In addition, **Frederick K. Goodwin, M.D.**, administrator for the Alcohol, Drug Abuse, and Mental Health Adminstration of the Department of Health and Human Services (ADAMHA), was awarded the first alumni achievement award in biomedical research. Dr. Goodwin is an internationally recognized authority in the research and treatment of major depression and manic depressive illness.

■ In an effort to expand the services of the region's only comprehensive clinical stroke program, a new acute stroke unit has been established at St. Louis University Hospital.

The unit, which is within the Stroke Resource Center, is jointly operated by the hospital and St. Louis University School of Medicine's department of neurology. The Center has been open since 1986 to provide better diagnostic and treatment options for patients suffering from stroke. In addition, the center is involved in numerous research studies on the prevention and treatment of stroke.

More than two million people in the United States are temporarily or permanently disabled by stroke each year. In the St. Louis area, 2,500 people are affected. The Stroke Resource Center annually evaluates more than 250 patients affected by stroke. Of those, more than 100 could be served by the acute care unit.

■ One out of every four Americans suffers from a major allergy that interferes with either work or play. In an effort to assist medical specialists to better diagnose and treat allergies, a major allergy symposium was held May 11-13 in St. Louis.

The symposium, "Allergy for the Clinician: Practical Solutions to Everyday Problems," was designed to give both physicians and allied health professionals an overview of allergies. It is sponsored by the division of allergy and immunology at St. Louis University School of Medicine and the American Academy of Allergy and Immunology.

Symposium director was **Raymond G. Slavin, M.D.**, professor of internal medicine and director of the the division of allergy and immunology at St. Louis University School of Medicine.

■ Organ donation awareness is becoming a critical health care issue. More than 100,000 people in the United States are presently waiting for a transplant. Half of them will die before a donor organ becomes available.

In an effort to dramatically highlight the need for organ donor awareness, St. Louis University Medical Center sponsored the "Sixth Annual Candlelight March" in downtown St. Louis on April 27. Two hundred people, including transplant recipients, surgeons and nurse coordinators as well as donor families attended the event, despite inclement weather.

Sandra Wallick, director of community relations at St. Louis University Medical Center, said that the Candlelight March is held annually as a consistent, visual reminder of the on-going need for, and the benefits of, organ donation.

The theme for the event was "Pass on the Light of Life; Support Organ Donation." To symbolize the passing of light, all marching participants were given free flashlights.

The Candlelight March was held in cooperation with the Mid-America Transplant Association (MTA), Bethesda Eye Institute, American Red Cross Tissue Services and the National Kidney Foundation.

Washington University

■ **Patricia L. Cole, M.D.**, and **W. Edwin Dodson, M.D.**, have been named associate dean for student affairs and associate dean for admissions, respectively, at Washington University School of Medicine in St. Louis.

The two will assume joint responsibility for the position held by **John C. Herweg, M.D.**, who retired June 30, after 25 years of service to the university. By sharing responsibilities, Cole and Dodson will be able to continue their research and clinical activities.

The appointments were announced by **William A. Peck, M.D.**, vice chancellor for medical affairs and dean of the School of Medicine. This is a continuation in a series of appointments being made as part of an administrative reorganization at the School of Medicine.

Herweg, professor in the Department of Pediatrics, has been on the faculty of the School of Medicine since 1951. He was named associate dean in 1965, and at the same time, assumed responsibility for student affairs.

Cole has been on the medical school faculty for four years and this year was named an assistant professor of medicine. Last year she was appointed director of invasive cardiology training at Jewish Hospital. In her new role, she will be responsible for dealing with students' academic affairs, assisting them with financial aid, reviewing clerkship reports and supervising operation of Olin Residence Hall.

Dodson has been on the medical school staff since 1971 and for the last four years has been a professor of pediatrics and neurology. As Associate Dean for Admissions, his primary role will be to plan and manage the admissions program at the School of Medicine, establishing recruitment and retention goals for the M.D., M.D./M.S. and M.D./Ph.D. programs.

■ **Theodore Reich, M.D.**, *Samuel and Mae S. Ludwig Professor of Psychiatry* and professor of genetics at Washington University School of Medicine in St. Louis, has been awarded four grants totalling $6.8 million to support his studies of genetic factors related to alcholism and depression.

Two five-year awards totalling $4.6 million come from the National Institute on Alcohol Abuse and Alcoholism and will support the School of Medicine's participation in a multicenter study. Six centers across the country will collect data for the project. At the conclusion of the study the School of Medicine will be one of two institutions where the gathered data will be analyzed. Indiana University is the other site.

Reich's work centers on determing heredity factors that put some individuals at higher risk for alcoholism. He will be looking at families and pedigrees in the St. Louis area. The ultimate goal of the research is to determine who is at risk for disease due to genetic vulnerability and molecularly modify their susceptibility.

Reich has also received two grants totalling $2.2 million from the National Institute of Mental Health. The awards will further the scientist's study of the genetics of bipolar disorders using methods of genetic linkage and support investigation of the familial transmission of bipolar manic depressive illness. The School of Medicine is one of 10 research centers involved in the five-year project, which will also look at possible genetic components of Alzheimer's Disease and schizophrenia.

Reich has been on the School of Medicine faculty since 1971.

University of Missouri-Columbia

■ **William A. Altemeier, M.D.**, formerly a pediatrics professor at Vanderbilt University in Nashville, TN, began duties July as the new chairman of MU's department of child health, announced **Dean Lester Bryant, M.D.**

W.A. Altemeier, M.D.

With Altemeier's appointment, MU's Health Sciences Center plans development of a Children's Center, which Altemeier defines as "a children's hospital within a hospital." Vanderbilt pioneered the concept in the early 1970s.

Details of the plan are not yet formulated and will have to be approved by MU administrators. The Children's Center would have its own advisory board reporting to University Hospital and Clinics administration.

After teaching at the University of Florida Medical Center for three years, Altemeier joined the faculty at Vanderbilt in 1972. As vice chairman of the department of pediatrics, he has headed its division of general pediatrics since 1985 and directed the university's Child Development Center the past four years.

The National Institutes of Health currently supports two of Altemeier's research programs. He hopes to bring one of them, a project focusing on predicting and treating child abuse to MU.

David Goldstein, M.D., had served as interim chairman of the department of child health since **Giulio Barbero, M.D.**, stepped down in December 1988 after 15 years in the position.

■ On May 25, two 3-year-old girls from southwest Missouri became the first patients in Missouri to have congenital heart defects corrected with a new, non-surgical procedure called button-device closure. The two-hour procedures were performed by **Zuhdi Lababidi, M.D.**, professor of child health.

In each girl, the button device was used to repair an atrial septal defect. The device consists of two folding disks that are delivered to the heart through a catheter inserted in a groin vein. The polyurethane disks are fastened on either side of the defect and then snapped together, closing the hole.

The procedure is considered an improvement over other catheter techniques, which are available at a limited number of medical centers. Button-device closure previously had been performed at only two locations in the United States but will be offered for wider use. It involves a one or two-day hospital stay, as opposed to one of 10 to 14 days in the case of traditional open-heart surgery.

■ **Philip C. Anderson, M.D.,** director of the division of dermatology, addressed the American Dermatology Association's annual leadership meeting May 12 at Sea Island, GA. Anderson also chaired the section on charitable concerns at the American Academy of Dermatology's long-range planning meeting in June. "Care of the Poor" was his topic as dinner speaker for the group.

■ **Penny Lorenz-Bailey,** a program specialist with the Head and Spinal Cord Injury Project at MU, was honored at a recent conference in San Diego, CA, by the National Highway Traffic Safety Administration. Bailey, one of 10 people honored and the only Missourian in the group, was recognized for her five years as a speaker for the project, which presents a 50-minute program on safety to thousands of Missouri students and law enforcement officers each year.

■ **Jeffrey A. Bredemann, M.D.,** resident physician in the department of anesthesiology, was awarded first place for his poster presentation in May at the Midwest Anesthesia Conference in Chicago. His case report was titled, "Treatment of Refractory Seizures in Massive Isoniazid Overdose."

■ **David Goldstein, M.D.,** professor of child health, presented an abstract titled, "Glycemic Control Predicts Risk of Diabetic Retinopathy," June 17 during the annual meeting of the American Diabetes Association in Atlanta, GA. His grant for a long-term study of the complications of diabetes have been renewed in the amount of $426,000 by the National Institutes of Diabetes and Digestive and Kidney Diseases.

■ **Donald Kay, M.D.,** professor of immunology and rheumatology, recently was inaugurated into the American College of Physicians.

■ **David M. Klachko, M.D.,** professor of medicine, received the Distinguished Service Award May 5 from the Missouri affiliate of the American Diabetes Association. He was recognized for more than 20 years of service to the association.

■ **Peter Konig, M.D.,** professor of child health, recently moderated a workshop and spoke on first-line asthma treatment during a grand seminar at the 46th annual meeting of the American Academy of Allergy and Immunology in Baltimore, MD. He was also a speaker for a symposium in Toronto, Canada on the practical management of childhood asthma.

■ **Vaskar Mukerji, M.D.,** assistant professor of cardiology, presented three papers at the fifth Pan American Congress of Diseases of the Chest in San Juan, Puerto Rico. They focused on patient discomfort from internal mammary angiography, the relationship of occupation to coronary artery disease, and panic disorder in patients with coronary artery disease.

■ **Karl D. Nolph, M.D.,** professor and director of nephrology, was elected president of the American Society of Artificial Internal Organs in Washington during the group's recent annual meeting. The society consists of scientists from many fields who are interested in research related to the development, evaluation and clinical applications of artificial internal organs. Nolph will have a major responsibility for planning and overseeing the society's 37th annual meeting in Chicago in April 1991.

In addition to his election, Nolph took part in the meeting's keynote debate on "Post Cardiotomy Acute Renal Failure — Artificial Organs and Metabolic Management."

■ **Gerald T. Perkoff, M.D.,** professor of family and community medicine, was the speaker May 26 for commencement exercises at the University of Utah School of Medicine. Perkoff completed his residency in internal medicine at the University of Utah and Salt Lake County General Hospital and formerly served on the university's faculty. An MU faculty member since 1979, he is a member of the prestigious Institute of Medicine of the National Academy of Sciences.

■ **Zbylut Twardowski, M.D.,** professor of nephrology, gave four presentations at the 36th annual meeting of the American Society for Artificial Internal Organs in Washington, D.C.

■ Six representatives of the department of medicine's division of immunology and rheumatology spoke in May during meetings of the American College of Rheumatology and Arthritis Health Professions Association in Chicago. The presenters were **Robert McMurray, M.D., Sara Walker, M.D., Lavona Birgen, M.Ed., Marian Minor, P.T., Ph.D.,** and **John Reid, Ph.D.**

■ **Eliot Sorel, M.D.,** of the Metropolitan Psychiatric Group in Washington gave the *11th Annual Kenneth F. Struessel Memorial Lecture* recently. He discussed "Social Psychiatry: A World View."

In conjunction with the lecture, the department of psychiatry present awards to three faculty members and three residents.

Johnna L. Russell, M.D., assistant professor and director of the Psychosomatic Medicine Service at University Hospital, received the *Guhleman Award for Clinical Excellence.* The award was established in 1981 to honor **Henry V. Guhleman, M.D.,** clinical professor, for his many years of distinguished service. It is presented annually to members of the psychiatry faculty who have provided outstanding service as clinicians/teachers in keeping with the model set by Guhleman.

■ **M. Marga Dick, M.D.,** clinical assistant professor, and **John F. Patterson, M.D.,** clinical associate professor, were co-winners of the *Resident's Award for Teaching Excellence.* **G. Douglas Frisch, M.D.,** and **Jerome C.M. Peters, D.O.,** received outstanding senior resident awards, and **Alejandro V. Natividad, M.D.,** was the recipient of the outstanding junior resident award.

The guest of honor was **Pamela Struessel,** who presented the resident awards.

University of Missouri-Kansas City

■ **Ralph R. Coffey, M.D.,** known as the "indomitable surgeon of Hospital Hill," was a leading figure in Kansas City medicine for more than 40 years. His legacy will continue with a chair and professorship at the University of Missouri-Kansas City. A fully endowed chair at UMKC is valued at a minimum of $1.1 million.

UMKC officials announced that the *Ralph R. Coffey Chair in Surgery* will be held by **L. Beaty Pemberton, M.D.,** professor at the UMKC School of Medicine and chairman of the surgery departments at the Medical School and Truman Medical Center. Pemberton oversees 11 full-time and six part-time physicians and 20 residents, who collectively perform about 2,500 operations a year.

As the *Coffey Professor,* Pemberton will continue his research on surgical anatomy and developing more effective ways to educate students on the topic.

Coffey trained more than 30 surgeons from 1951-1963 at General Hospital, now Truman Medical Center, where he was director of surgery. He was also on the staff at St. Joseph Hospital for more than 40 years and was an attending surgeon at St. Luke's Medical Center.

The *Coffey Chair* was funded through Coffey's bequest to The Greater Kansas City Foundation and Affiliated Trusts.

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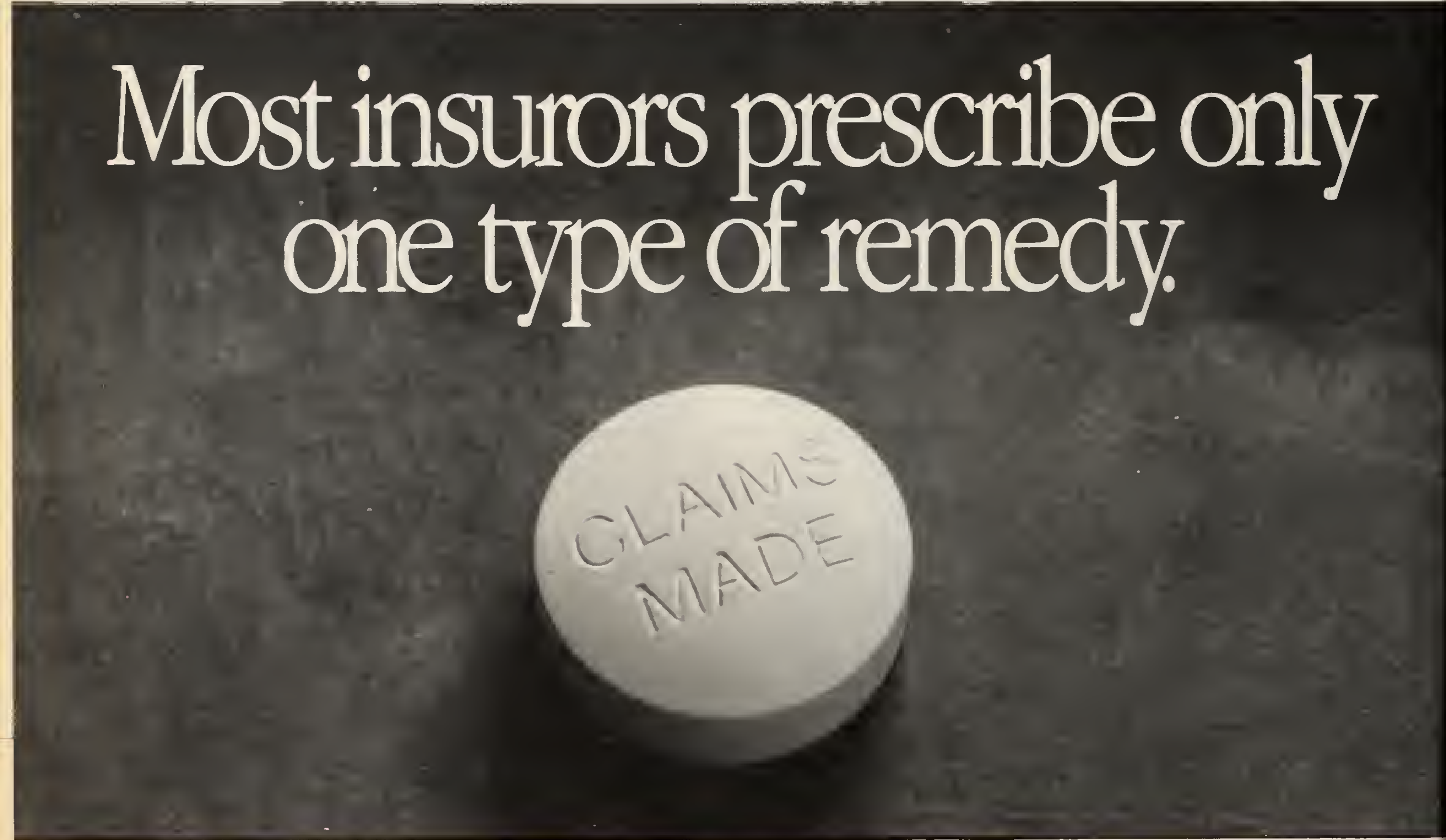

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Final Disciplinary Actions

The following is a listing of final disciplinary actions taken by the State Board of Registration for the Healing Arts. The listing includes actions finalized through August 1989. This information is made available to the public under the provisions of Section 334.101 RSMo.

■ **KEITH PACK, M.D.,** *St. Louis, Missouri*
Order dated 5/6/89 — Revocation of Missouri license.
Violation: Section 334.103, RSMo.

■ **NORMA D. FARMER, M.D.,** *Farmington, Missouri*
Order dated 5/5/89 — Voluntary surrender.
Violation: Section 334.100, RSMo.

■ **THOMAS S. SCHULTZ, M.D.,** *Walpole, Massachusetts*
Order dated 6/29/89 — One year suspension; Two year probration upon return to Missouri.
Violation: Section 334.100.2(8), RSMo 1986.

■ **ALONZO RUDOLFO GIMENEZ, M.D.,** *Berlin, Wisconsin*
Order dated 5/6/89 — Suspension stayed, Letter of Reprimand issued.
Violation: Section 334.100.2(8), RSMo 1986.

■ **RONALD J. BOHMER, D.O.,** *Scottsdale, Arizona*
Order dated 6/29/89 — Three year probation.
Violation: Section 334.100.2(18)(22), RSMo Supp. 1987.

■ **RICHARD G. CASEY, M.D.,** *St. Louis, Missouri*
Order dated 5/2/89 — Voluntary surrender.
Violation: Section 334.100.2(2) (4a) (14) (17), RSMo Supp. 1987.

■ **WOODROW B. DODSON, D.O.,** *St. Louis, Missouri*
Order dated 6/5/89 — Voluntary surrender.
Violation: Section 334.100.2(5)(13), RSMo Supp. 1988.

■ **PAUL B. JUERGENS, M.D.,** *Columbia, Missouri*
Order dated 3/24/89 — Voluntary surrender.
Violation: Section 334.100, RSMo.

■ **JAMES B. CHONG, M.D.,** *Camilla, Georgia*
Order dated 5/1/89 — Thirty day suspension stayed; Two year probation upon return to Missouri.
Violation: Section 334.100.2(2), RSMo 1986.

■ **DONALD J. WEISS, D.O.,** *Marietta, Georgia*
Order dated 5/25/89 — Six month suspension; Two year probation upon return to Missouri.
Violation: Section 334.100.2(8), RSMO Supp. 1987.

■ **ROBERT B. WICKMAN, D.O.,** *Scottsdale, Arizona*
Order dated 2/1/89 — Six month suspension, Two year probation.
Violation: 334.100.2(5)(8), RSMo.

New Members

■ **Thomas W. Alderson, M.D.**, 3306 Mitchell, St. Joseph 64507, has become a member of the Buchanan County Medical Society. Dr. Alderson received his preliminary education at the University of Kansas and obtained his medical degree at the University of Kansas in 1975. He completed his residency at St. Francis Hospital, Wichita, KS. Dr. Alderson specializes in family practice.

■ **Uri Alon, M.D.**, Children's Mercy Hospital, Div. of Pediatric Nephrology, 24th & Gillham Rd., Kansas City 64108, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Alon obtained his medical degree at Hebrew University Hadassah Medical School, Jerusalem in 1975. He completed his residency at Rambam Medical Center, Haifa, Israel. Dr. Alon specializes in pediatrics & pediatric nephrology.

■ **Sylvia Awadalla, M.D.**, Suite 16304 Barnes Hospital Plaza, St. Louis 63110, has become a member of the St. Louis Metropolitan Medical Society. Dr. Awadalla obtained his medical degree at Ohio State University in 1985. He completed his residency at Barnes Hospital, St. Louis, MO. Dr. Awadalla specializes in neurology.

■ **Ann E. Behrend, M.D.**, Suite 303, 930 Carondelet Dr., Kansas City 64114, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Behrend received his preliminary education at the University of Missouri-Kansas City and obtained his medical degree at UMKC in 1982. She completed her residency at Truman Medical Center-West, Kansas City, MO. Dr. Behrend specializes in obstetrics/gynecology.

■ **Mark Bernhardt, M.D.**, Suite 610, 4320 Wornall Road, Kansas City 64111, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Bernhardt received his preliminary education at the University of Kansas and obtained his medical degree at the University of Kansas School of Medicine in 1983. He completed his residency at St. Francis Hospital, Wichita, KS. Dr. Bernhardt specializes in orthopaedics and spinal surgery.

■ **Albert D. Brooks, M.D.**, 7601 Natural Bridge, St. Louis 63121, has become a member of the St. Louis Metropolitan Medical Society. Dr. Brooks obtained his medical degree at Loma Linda University School of Medicine in 1977. He completed his residency at U.S. Pits, Baltimore, MD. Dr. Brooks specializes in internal medicine.

■ **Alan J. Chen, M.D.**, 1300 N. One Mile Rd., Dexter 63841, has become a member of the Missouri State Medical Association. Dr. Chen received his preliminary education at National Taiwan University and obtained his medical degree at Queen's University Medical School, Ontario, in 1975. He completed his residency at Toronto Western General Hospital, Toronto, Ontario, Canada. Dr. Chen specializes in family practice.

■ **Mark Maw-Chang Chin, M.D.**, 222 S. Woods Mill Rd., #N510, Chesterfield 63017, has become a member of the St. Louis Metropolitan Medical Society. Dr. Chin obtained his medical degree at Taipei Medical College, Taiwan, in 1980. He completed his residency at St. Luke's Hospital, St. Louis, MO. Dr. Chin specializes in internal medicine.

■ **Ralph G. Dacey, Jr., M.D.**, Neurosurgery, Barnes Hospital Plaza, St. Louis 63110, has become a member of the St. Louis Metropolitan Medical Society. Dr. Dacey obtained his medical degree at the University of Virginia in 1974. He completed his residency at the University of Virginia, Charlottesville, VA. Dr. Dacey specializes in neurological surgery.

■ **Daniel S. Durrie, M.D.**, Suite 650, 2900 Baltimore, Kansas City 64108, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Durrie received his preliminary education at the University of Nebraska and obtained his medical degree at the University of Nebraska Medical Center in 1975. He completed his residency at the University of Nebraska Medical Center, Omaha, NE. Dr. Durrie specializes in ophthalmology.

■ **Leonard F. Fagan, Jr., M.D.**, 533 Couch Ave., Suite 174, St. Louis 63122, has become a member of the St. Louis Metropolitan Medical Society. Dr Fagan obtained his medical degree at the St. Louis University School of Medicine in 1984. He completed his residency at the University Medical Center, Indianapolis, IN. Dr. Fagan specializes in cardiovascular disease.

■ **Paul R. Frewin, M.D.**, 3525 S. National, Suite 210, Springfield 65807, has become a member of the Greene County Medical Society. Dr. Frewin received his preliminary education at Oral Roberts University and obtained his medical degree at the University of Vermont College of Medicine in 1983. He completed his residency at the University of Louisville School of Medicine, Louisville, KY. Dr. Frewin specializes in orthopaedic surgery.

■ **Louis B. Harris, M.D.**, 1300 North Oakland, Suite A, Bolivar 65613, has become a member of the Missouri State Medical Association. Dr. Harris specializes in family practice.

■ **Faith H. Holcombe, M.D.**, 77 Westport Plaza, Suite 168, St. Louis 63146, has become a member of the Missouri State Medical Associaton. Dr. Holcombe received her preliminary education at Harvard University and obtained her medical degree at Washington University School of Medicine in 1980. She completed her residency at Barnes Hospital, St. Louis, MO. Dr. Holcombe specializes in internal medicine.

■ **David N. Holleman, M.D.**, Suite 206, 4400 Broadway ,Kansas City 64111, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Holleman received his preliminary education at William Jewell College and obtained his medical degree at the University of Missouri-Columbia in 1986. He completed his residency at the

University of Missouri Hospital and Clinics, Columbai, MO. Dr. Holleman specializes in pediatrics.

■ **Vance R. Jernstrom, M.D.**, Suite 512, 4320 Wornall Rd., Kansas City 64111, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Jernstrom received his preliminary education at the University of Nebraska and obtained his medical degree at the University of Nebraska Medical Center in 1981. He completed his residency at the University of Kansas Medical Center, Kansas City, KS. Dr. Jernstrom specializes in otolaryngology.

■ **Bruce A. Kaufman, M.D.**, 400 South Kingshighway Blvd., Suite 1S46, St. Louis 63110, has become a member of the St. Louis Metropolitan Medical Society. Dr. Kaufman obtained his medical degree at Case Western Reserve University in 1982. He completed his residency at the University Hospitals of Cleveland, Cleveland, OH. Dr. Kaufman specializes in neurosurgery.

■ **Angelo A. Llana, M.D.**, 900 N. Belt, St. Joseph 64506, has become a member of the Buchanan County Medical Society. Dr. Llana received his preliminary education at the University of Arkansas and obtained his medical degree at the University of Arkansas for Medical Sciences in 1986. He completed his residency at the University of Arkansas, Monticello, AR. Dr. Llana specializes in internal medicine.

■ **Van An Le, M.D.**, Dept. of Radiology, St. Louis University School of Medicine, 3635 Vista Ave., St. Louis 63110, has become a member of the St. Louis Metropolitan Medical Society. Dr. Le obtained his medical degree at the University of Texas Southwestern Medical School in 1985. He completed his residency in urology at the University of Texas Medical School Affiliated Hospitals, Houston, TX. He is completing a residency in radiology at St. Louis University School of Medicine Affiliated Hospitals, St. Louis, MO. Dr. Le specializes in radiology.

■ **Raymond D. Mosie, M.D.**, Suite 204, 4444 N. Belleview, Kansas City 64116, has become a member of the Clay-Platte County Medical Society. Dr. Mosie received his preliminary education at the University of Missouri-Kansas City and obtained his medical degree at the University of Missouri-Columbia School of Medicine in 1983. He completed his residency at Northwestern University Medical Center, Chicago, IL. Dr. Mosie specializes in plastic and reconstructive surgery.

■ **Gary Quick, M.D.**, Emergency Dept., Barnes Hospital Plaza, St. Louis 63110, has become a member of the St. Louis Metropolitan Medical Society. Dr. Quick obtained his medical degree at the University of Pittsburgh in 1972. He completed his residency at Roanoke Memorial Hospital, Roanoke, VA. Dr. Quick specializes in emergency medicine.

■ **George E. Romkema, M.D.**, Missouri Baptist, 3015 N. Ballas Road, St. Louis 63131, has become a member of the St. Louis Metropolitan Medical Society. Dr. Romkema obtained his medical degree at the Medical College of Wisconsin in 1985. He completed his residency at Barnes Hospital, St. Louis, MO. Dr. Romkema specializes in anesthesiology.

■ **C. Eric Schroeder, M.D.**, 2929 Baltimore, Suite 545, Kansas City 64108, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Schroeder received his preliminary education and obtained his medical degree at the University of Missouri-Kansas City in 1978. He completed his residency at Kern Medical Center, Bakersfield, CA. Dr. Schroeder specializes in pulmonary disease.

■ **Danny A. Smith, M.D.**, 10855 Pear Blossom Ct., St. Ann 63074, has become a member of the Missouri State Medical Association. Dr. Smith received his preliminary education at Alcorn State University and obtained his medical degree at East Tennessee State University in 1986. He completed his residency at St. Francis Medical Center, Pittsburgh, PA. Dr. Smith specializes in internal medicine.

■ **Steven B. Standiford, M.D.**, Dept. of Surgery, Ellis Fischel State Cancer Center, 115 Business Loop 70 W., Columbia 65203, has become a member of the Boone County Medical Society. Dr. Standiford received his preliminary education at Wilkes College and obtained his medical degree at the New Jersey Medical School in 1981. He completed his residency at Temple University Hospital, Philadelphia, PA. Dr. Standiford specializes in general surgery.

■ **James A. Stuckmeyer, M.D.**, 205 West R.D. Mize Road, Blue Springs 64014, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Stuckmeyer received his preliminary education at St. Mary's University and obtained his medical degree at the St. Louis University School of Medicine in 1980. He completed his residency at St. Louis University Medical Center, St. Louis, MO. Dr. Stuckmeyer specializes in orthopaedic surgery.

■ **Robert J. Stuppy, M.D.**, 2817 McClelland Blvd., P.O. Box 2788, Joplin 64803, has become a member of the Jasper County Medical Society. Dr. Stuppy received his preliminary education at the University of Missouri-Kansas City and obtained his medical degree at UMKC in 1982. He completed his residency at Washington University, St. Louis, MO. Dr. Stuppy specializes in cardiology.

■ **Michael J. Sweeney, M.D.**, Suite 401, 1010 Carondelet Dr., Kansas City 64114, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Sweeney received his preliminary education at the University of Missouri-Kansas City and obtained his medical degree at UMKC in 1978. He completed his residency at Methodist Medical Center, St. Joseph, MO. Dr. Sweeney specializes in internal medicine.

■ **Susan Thompson, M.D.**, 903 W. Clay, Plattsburg 64477, has become a member of the Clinton County Medical Society. Dr. Thompson obtained her medical degree at the University of Kansas School of Medicine in 1985. She completed her residency at Wesley Medical Center, Wichita, KS. Dr. Thompson specializes in family practice.

■ **Henry J. Wedig, Jr., M.D.**, 1101 N. Providence, Columbia 65203, has become a member of the Boone County Medical Society. Dr. Wedig received his preliminary education at the University of Missouri-Columbia and obtained his medical degree at the Louisiana State University School of Medicine in 1985. He completed his residency at Earl K. Long Hospital, Baton Rouge, LA. Dr. Wedig specializes in family practice.

■ Resident Members

St. Louis Resident Section

Edwin D. Dunteman, M.D. — *anesthesiology*
Ricardo R. Ramos, M.D. — *not specified*

■ Student Members

St. Louis University

Michael A. French

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Charity Care Program: Update 1989

The Physician's Charity Care Program officially began in January 1990. The Program asks that physicians document the number of encounters and number of hours of hands-on charity medical care given to indigent and Medicaid patients. The following is a list of the Missouri physicians who provided at least 50 hours of charity care during 1989.

Victor H. Albera, M.D.
Bismarck
Jeff Anglen, M.D.
Kansas City
Paul N. Arnold, M.D.
Springfield
Grant Bever, M.D.
Harrisonville
Robert E. Bolinske, M.D.
St. Louis
Ralph Braunschweig, M.D.
Columbia
R.A. Chandler, M.D.
Kansas City
Gerhard W. Cibis, M.D.
Kansas City
Robert J. Corday, M.D.
St. Louis
Bob Corder, M.D.
St. Joseph
William S. Costen, M.D.
Chesterfield
Welby Cox, M.D.
Springfield
Roderic C. Crist, M.D.
Cape Girardeau
Milamari A. Cunningham, M.D.
Columbia
Michael DePriest, M.D.
St. Joseph
John DeSpain, M.D.
Columbia
Gary A. Dyer, M.D.
St. Joseph
H. Peter Ekern, M.D.
Mexico
Joseph L. Fisher, M.D.
St. Joseph
L.M. Gallagher, M.D.
California
Francisco J. Garriga, M.D.
Florissant
Michael A. Gentry, M.D.
Springfield
Ben Goldstein, M.D.
St. Louis
Drew W. House, M.D.
Kansas City
M. Robert Hill, M.D.
St. Louis
John Ippensen, M.D.
Springfield
Mike Kozminski, M.D.
St. Joseph
Keith A. LaFerriere, M.D.
Springfield
L.M. Lederer, M.D.
Kansas City
Richard Lord, M.D.
St. Louis
Robert H. Lund, M.D.
St. Louis
Rashmi Nakra, M.D.
St. Louis
Homer E. Nash, Jr., M.D.
St. Louis
Helen Nguyen, M.D.
St. Joseph
J. Gustavo Nix, M.D.
Bolivar
Lawrence W. O'Neal, M.D.
St. Louis
Jimmy C. Presley, M.D.
Springfield
George Price, Jr., M.D.
Columbia
Frank O. Richards, M.D.
St. Louis
Phyllis G. Roberts, M.D.
St. Joseph
John F. Rose, M.D.
Chillicothe
Paul E. Sauer, M.D.
Springfield
John S. Schoentag, M.D.
St. Louis
Perry L. Schoenecker, M.D.
St. Louis
William T. Schnarr, M.D.
St. Charles
George F. Steinhardt, M.D.
St. Louis
Thomas R. Stubbs, M.D.
West Plains
Timothy A. Tesmer, M.D.
Springfield
Greg Tobin, M.D.
Cape Girardeau
Robert P. Wankum, M.D.
Jefferson City

Physician's Recognition Awards

Twenty-six MSMA members qualified for the MSMA-AMA Physician's Recognition Award during March 1990. The award, presented by the Missouri State Medical Association and the American Medical Association, is given to those physicians who voluntarily complete 150 credit hours of continuing medical education within a three-year period. Sixty of the credit hours must be earned in Category 1 programs.

Boone

Charles W. Barbee, *Columbia*
James S. Carter, *Columbia*
John A. Crouch, *Columbia*
Alice Landrum, *Columbia*
John W. Long, *Columbia*
William M. See, *Columbia*

Buchanan

Benedict A. Moranville, *St. Joseph*

Cole

Charles J. Landsbaum, *Jefferson City*

Greene

Keith A. LaFerriere, *Springfield*

Jasper

James H. Habermann, *Joplin*

Johnson

Albert L. Folkner, *Warrensburg*

Lake Ozarks

Melvin R. Hayden, *Camdenton*

Metro. Med. - Greater Kansas City

Melvin N. Abend, *Kansas City*
Keith J. Abercrombie, *Kansas City*
Jo J. Callaway, *Kansas City*
Kenneth L. Goetz, *Kansas City*
Ruth E. Millett, *Kansas City*
George H. Myers, *Kansas City*
George R. Nicholis, *Kansas City*
Robert M. Ross, *Kansas City*
James H. Whitaker, *Kansas City*
Donald V. Youll, *Kansas City*

SEMO

Roy T. Waltrip, *Sikeston*

St. Louis

Frederick D. Bauschard, *St. Louis*
James C. Corder, *St. Louis*
Sumner Holtz, *Chesterfield*

In Memoriam

■ **John D. Blair, M.D.**, died March 23, 1990 at the age of 59. Dr. Blair, a pathologist, practiced medicine in St. Louis for more than 20 years. He worked in children's hospitals in Boston and Lexington, KY, before coming to St. Louis. He had been an associate professor of pathology at the St. Louis University School of Medicine since 1974. He directed autopsy pathology at University Hospital since 1980 and was director of pathology at Cardinal Glennon Children's Hospital. He obtained his medical degree at the University of Havana School of Medicine-Cuba in 1956. Dr. Blair was a member of the St. Louis Metropolitan Medical Society.

■ **John H. Gaskins, M.D.**, died February 15, 1990 at the age of 75. Dr. Gaskins, a plastic and reconstructive surgeon, practiced medicine in Kansas City from 1945 until his retirement in 1983. He was formerly chief of surgery at St. Luke's Hospital. He obtained his medical degree at Northwestern University Medical School in 1942. Dr. Gaskins was a member of the Metropolitan Medical Society of Greater Kansas City.

■ **Larry B. Klebba, M.D.**, died May 16, 1990 at the age of 74. Dr. Klebba, a family practitioner, practiced medicine in Jefferson City and Linn for many years until his retirement in 1987. He was on the staffs of St. Mary's Health Center and Memorial Community Hospital and had been a flight surgeon with the U.S. Army Air Corps. He obtained his medical degree at St. Louis University School of Medicine in 1941. Dr. Klebba was a member of the Cole County Medical Society.

■ **Harry B. Levey, M.D.**, died April 24, 1990 at the age of 82. Dr. Levey, an obstetrician/gynecologist, practiced medicine in the Kansas City area for 57 years until his retirement. He formerly served on the staffs at Baptist Medical Center, Menorah Medical Center and St. Joseph Health Center. He obtained his medical degree at the University of Kansas School of Medicine in 1931. Dr. Levey was a member of the Metropolitan Medical Society of Greater Kansas City.

■ **F. Stanley Morest, M.D.**, died April 4, 1990 at the age of 85. Dr. Morest, an internist, practiced medicine in Kansas City for 33 years before his retirement in 1964. He was former president of the medical staffs at Research Hospital and Truman Medical Center and was an associate at the University of Kansas Medical Center from 1949 to 1954. He obtained his medical degree at Northwestern University School of Medicine in 1931. Dr. Morest was a member of the Metropolitan Medical Society of Greater Kansas City.

■ **Norman Orgel, M.D.**, died April 5, 1990 at the age of 80. Dr. Orgel, an internist, served as president of the Jewish Hospital medical staff during the 1960s. In 1985, he was named professor emeritus at Washington University. He was president of the Social Health Association of Greater St. Louis for 15 years and was a past chairman of the board of the group. He obtained his medical degree at Washington University School of Medicine in 1934. Dr. Orgel was a member of the St. Louis Metropolitan Medical Society.

Information for Contributors

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Manuscripts should be submitted to the editor, **Donald G. Sessions, M.D.**, P.O. Box 1028, 113 Madison, Jefferson City, MO 65102. The transmittal letter should designate one author as corrrespondent and include his address and telephone number.

In addition, in view of The Copyright Revision Act of 1976, effective Jan. 1, 1978, transmittal letters to the editor should contain the following language: "In consideration of the Missouri State Medical Association's taking action in reviewing and editing my submission, the author(s) undersigned hereby transfers, assigns or otherwise conveys all copyright ownership to the MSMA in the event that such work is published by the MSMA." We regret that transmittal letters not containing the foregoing language signed by all authors of the submission will necessitate delay in review of the manuscript. Please include the title of the article in the transmittal letter.

Manuscripts

Manuscripts should be typewritten, double-spaced, and the original with one copy submitted. Retain another copy for proofreading. Please number the pages of your manuscript. Manuscripts are not returned. Hospital and University appointments of the author(s) should accompany the manuscript. A synopsis-abstract of no more than 75 words should accompany the manuscript. Manuscripts may be submitted on 5¼ or 3½ floppy disks using WordPerfect 4.2 or below.

References

References should be cited in numerical order in the text and arranged at the end of the article in the same order in which they are cited. The reference should give name of author, title of article, name of periodical, volume number, initial page number and year. Authors are responsible for reference accuracy.

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Illustrations should be glossy prints or drawings in India ink on white paper. They should not be mounted and name of author and figure number should be penciled lightly on the back. Legends should appear on a separate sheet.

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Editorials should be written in clear, concise language. Length should be about two or three pages typed with double spacing.

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Letters will be published at the discretion of the editor, managing editor, and Editorial Board.

Deadlines

All material other than scientific should be received prior to the first of the month preceding month of publication.

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1. A. Morales et al., New England Journal of Medicine: 1221. November 12, 1981.
2. Goodman, Gilman — The Pharmacological basis of Therapeutics 6th ed., p. 176-188. McMillan December Rev. 1/85.
3. Weekly Urological Clinical letter, 27:2, July 4, 1983.
4. A. Morales et al., The Journal of Urology 128: 45-47, 1982.

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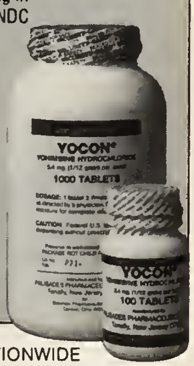

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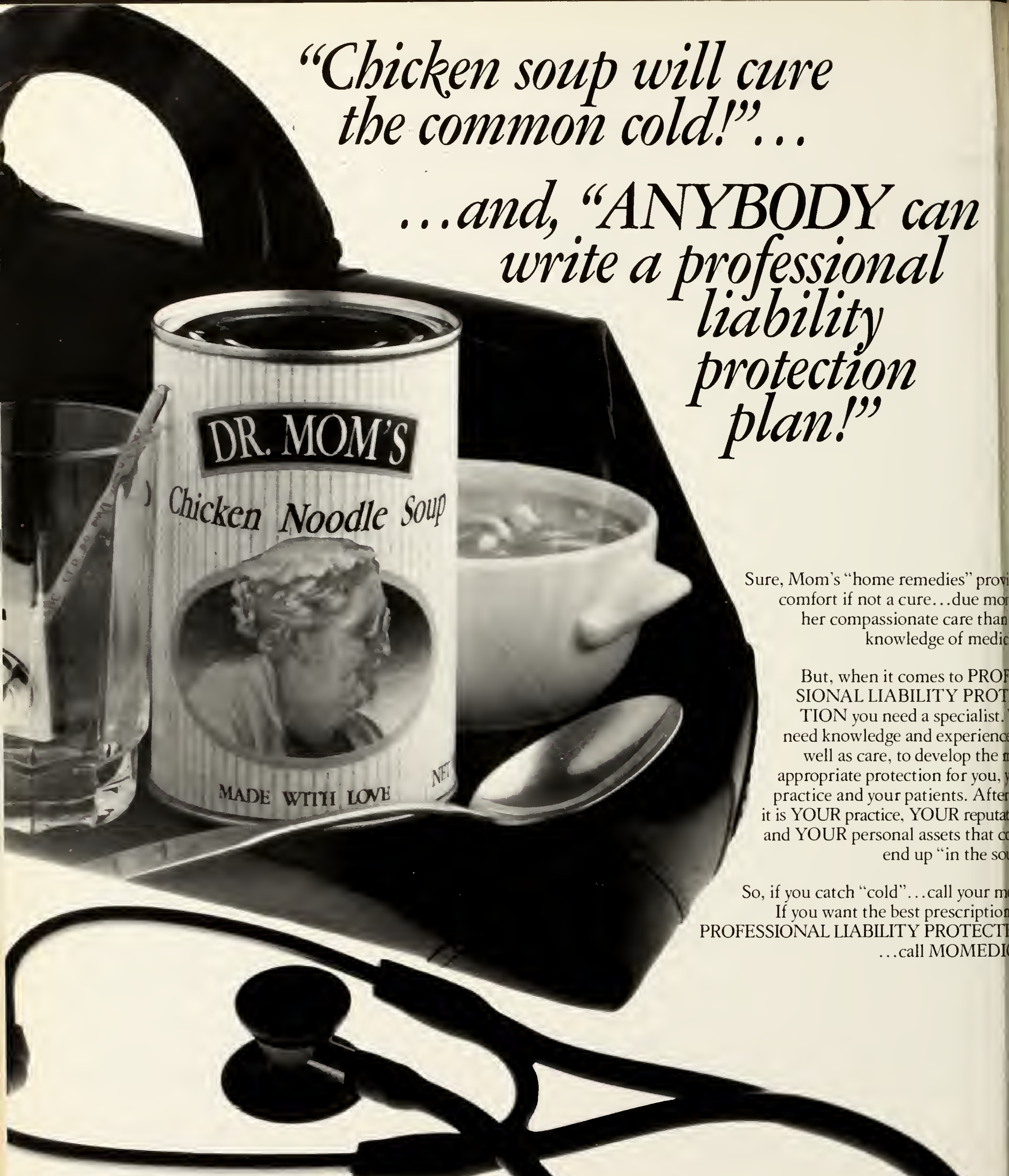

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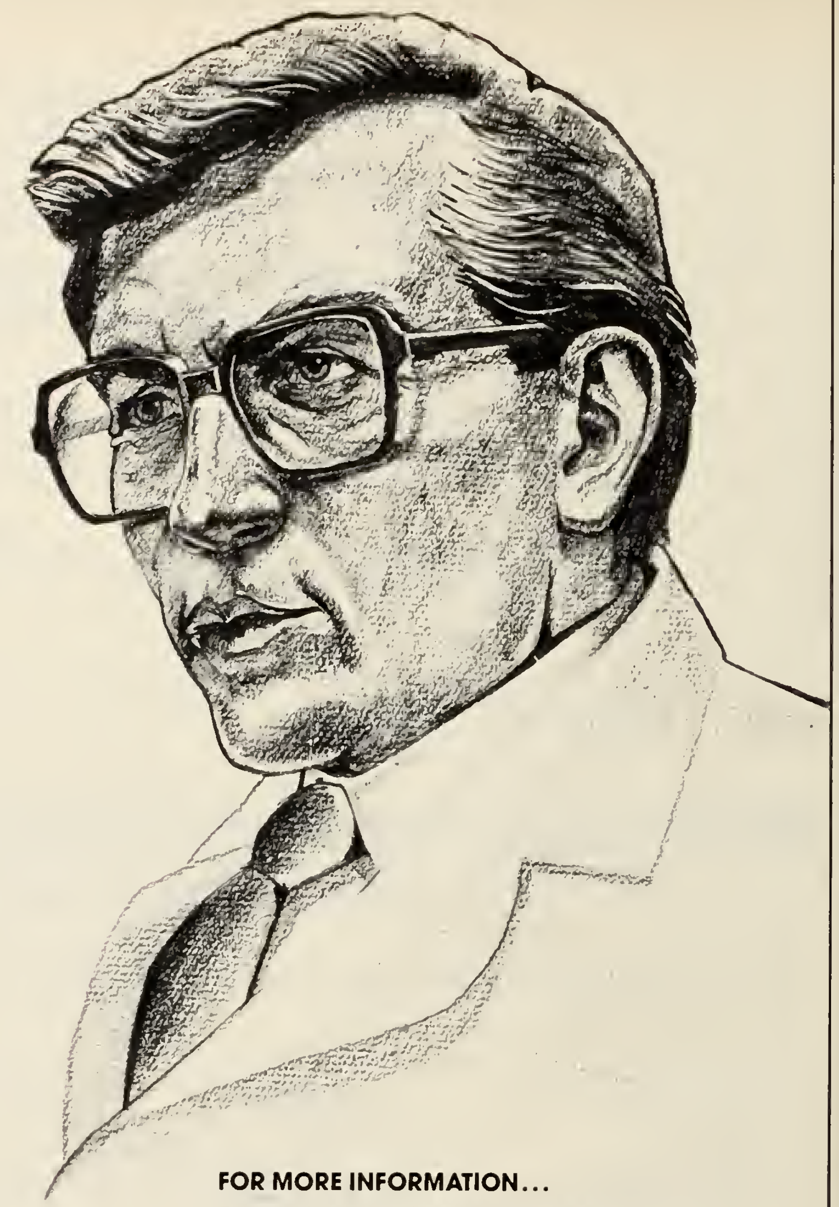

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History

Lyme disease was first recognized in Old Lyme, Connecticut in the mid-1970s as an unusual cluster of "juvenile arthritis" cases. Later observations revealed that a skin rash called **erythema chronicum migrans** was associated with the disease, as was a history of previous tick bites. In 1982, a corkscrew-shaped bacteria, *Borrelia burgdorferi*, was found in the digestive tract of ticks in the area. This bacteria is the causative agent of Lyme disease.

About 1500 cases of Lyme disease are reported annually to the U.S. Centers for Disease Control. It has been reported in 36 of the 50 states, including Missouri.

Transmission

"Classic" Lyme disease as seen in the eastern and north central states is spread by the deer tick, *Ixodes dammini.* (*Ixodes* ticks are commonly referred to as "hard-bodied" or "seed" ticks because of their hard outer shell and small size.) However, this particular tick is rare in Missouri. Another *Ixodes* species, the lone star tick, is a native Missouri species and also harbors the disease. The causative bacteria has also been found in the common dog tick, but no studies have been conducted to determine if Lyme disease is transmissible via this route.

Other ticks not native to Missouri are known to spread Lyme disease.

Signs and symptoms

Borrelia bacteria gain access to humans through tick bites. As the tick feeds, bacteria are released from the tick and enter the bloodstream. However, only a small percentage of people bitten by ticks carrying the bacteria will actually develop Lyme disease. The likelihood of infection depends on how long the tick feeds upon its host.

Lyme disease can manifest itself in a range from days to months, and at one or more of three clinical stages.

Stage I symptoms can be seen within 3 - 20 days. The classic sign is a skin rash called **erythema chronicum migrans**, or ECM. ECM presents as a hot, burning rash with raised, red bumps at the site of the tick bite (although more than half of all patients have no recollection of a previous tick bite). As this rash spreads outward in a circular fashion, the center clears, but the border remains bright red. Secondary rashes at distant sites can also occur.

(over)

For Your Information:

Lyme Disease

Twenty percent of patients with Stage I disease will not develop the rash, and only acquire vague, flu-like symptoms (fever, chills, stiff neck, sore throat, muscle and joint aches), or no symptoms at all.

Stage II symptoms encompass both cardiac and neurological signs that occur weeks to months after the tick bite. Five to 10% of patients may experience dizziness, lightheadedness, shortness of breath, sharp chest pain, and a sensation that the heart is "racing." Electrocardiographs of these patients may show a condition known as **heart block**.

Fifteen to 20% of patients will experience neurological symptoms, some mimicking meningitis (headache, stiff neck). Others are more general (dizziness, muscle weakness), and yet a third group experience focal neurological signs (earache, hand or foot numbness, "tingling," or "prickling").

Stage III disease, occurring months after the initial bite, is manifested by one or more repeated episodes of arthritis involving one or more large joints, most frequently the knee. These attacks can last several days to months, becoming less severe and less frequent over time. About 10% of patients may develop a chronic, erosive form of arthritis.

Diagnosis and treatment

The rash seen in Stage I disease is diagnostic of Lyme disease. In addition, antibodies to the causative bacteria can be detected in blood, spinal fluid, or joint fluid approximately six weeks after exposure.

Treatment of Stage I disease consists of at least two weeks of oral antibiotics (usually tetracycline or doxycycline). Stage II or III disease is best treated with intravenous antibiotics.

Prevention

Individual awareness and "tick-smart" behavior can prevent Lyme disease.

- Avoid tick-infested areas whenever possible. Pregnant women should be particularly careful. Although the actual risk of Lyme disease to the fetus is unknown, studies show the bacteria can be transmitted to the fetus' blood via the mother's blood.
- Wear a hat and long-sleeved, bright-colored clothing when walking in wooded areas. Ticks are more easily recognized on light backgrounds.
- Use a tick repellent containing DEET (the container may say, "N,N,-diethyl-meta-toluamide or diethyl-m-toluamide").
- Make a thorough body check for ticks — especially the scalp — after any outdoor activity.
- Frequently check pets for ticks.
- When a tick is attached to the skin, remove it with tweezers, using gentle, sustained pressure. **Do not** remove with a hot match, chemicals, or petroleum jelly. This may cause the tick to release the bacteria into the skin.

With proper care and prevention, needless worry about Lyme disease can be avoided, and individuals can enjoy their favorite outdoor activities — **safely**.

■

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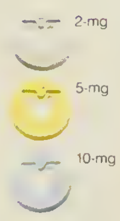
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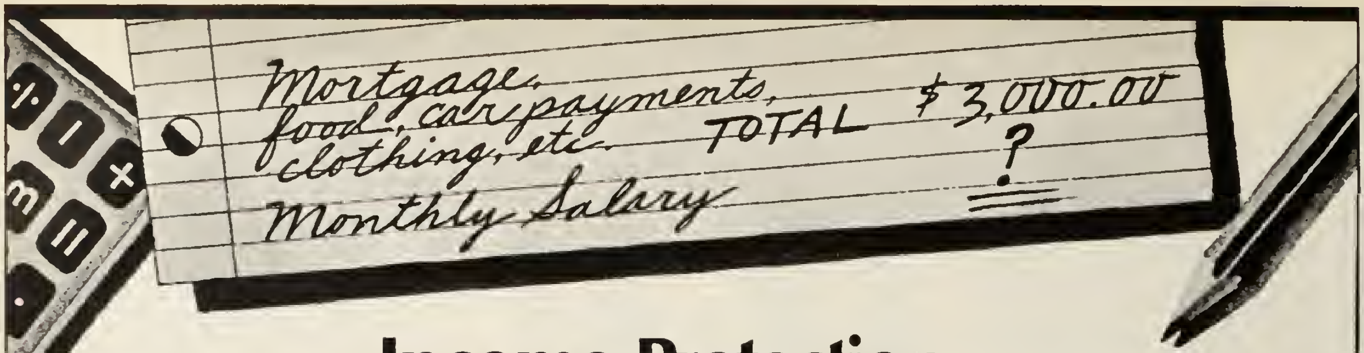
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References

1. USP DI Update, September/October 1988, p 120.
2. Br J Clin Pharmacol 1985;20:710-713.
3. Data on file, Lilly Research Laboratories.
4. Scand J Gastroenterol 1987;22(suppl 136):61-70.
5. Am J Gastroenterol 1989;84:769-774.

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Indications and Usage: 1. *Active duodenal ulcer*—for up to eight weeks of treatment. Most patients heal within four weeks.

2. *Maintenance therapy*—for healed duodenal ulcer patients at a reduced dosage of 150 mg h.s. The consequences of therapy with Axid for longer than one year are not known.

Contraindication: Known hypersensitivity to the drug. Use with caution in patients with hypersensitivity to other H_2-receptor antagonists.

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2. Dosage should be reduced in patients with moderate to severe renal insufficiency.

3. In patients with normal renal function and uncomplicated hepatic dysfunction, the disposition of nizatidine is similar to that in normal subjects.

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Drug Interactions—No interactions have been observed with theophylline, chlordiazepoxide, lorazepam, lidocaine, phenytoin, and warfarin. Axid does not inhibit the cytochrome P-450 enzyme system; therefore, drug interactions mediated by inhibition of hepatic metabolism are not expected to occur. In patients given very high doses (3,900 mg) of aspirin daily, increased serum salicylate levels were seen when nizatidine, 150 mg b.i.d., was administered concurrently.

Carcinogenesis, Mutagenesis, Impairment of Fertility—A two-year oral carcinogenicity study in rats with doses as high as 500 mg/kg/day (about 80 times the recommended daily therapeutic dose) showed no evidence of a carcinogenic effect. There was a dose-related increase in the density of enterochromaffin-like (ECL) cells in the gastric oxyntic mucosa. In a two-year study in mice, there was no evidence of a carcinogenic effect in male mice, although hyperplastic nodules of the liver were increased in the high-dose males as compared with placebo. Female mice given the high dose of Axid (2,000 mg/kg/day, about 330 times the human dose) showed marginally statistically significant increases in hepatic carcinoma and hepatic nodular hyperplasia with no numerical increase seen in any of the other dose groups. The rate of hepatic carcinoma in the high-dose animals was within the historical control limits seen for the strain of mice used. The female mice were given a dose larger than the maximum tolerated dose, as indicated by excessive (30%) weight decrement as compared with concurrent controls and evidence of mild liver injury (transaminase elevations). The occurrence of a marginal finding at high dose only in animals given an excessive and somewhat hepatotoxic dose, with no evidence of a carcinogenic effect in rats, male mice, and female mice (given up to 360 mg/kg/day, about 60 times the human dose), and a negative mutagenicity battery are not considered evidence of a carcinogenic potential for Axid.

Axid was not mutagenic in a battery of tests performed to evaluate its potential genetic toxicity, including bacterial mutation tests, unscheduled DNA synthesis, sister chromatid exchange, mouse lymphoma assay, chromosome aberration tests, and a micronucleus test.

In a two-generation, perinatal and postnatal fertility study in rats, doses of nizatidine up to 650 mg/kg/day produced no adverse effects on the reproductive performance of parental animals or their progeny.

Pregnancy—Teratogenic Effects—Pregnancy Category C—Oral reproduction studies in rats at doses up to 300 times the human dose and in Dutch Belted rabbits at doses up to 55 times the human dose revealed no evidence of impaired fertility or teratogenic effect; but, at a dose equivalent to 300 times the human dose, treated rabbits had abortions, decreased number of live fetuses, and depressed fetal weights. On intravenous administration to pregnant New Zealand White rabbits, nizatidine at 20 mg/kg produced cardiac enlargement, coarctation of the aortic arch, and cutaneous edema in one fetus, and at 50 mg/kg, it produced ventricular anomaly, distended abdomen, spina bifida, hydrocephaly, and enlarged heart in one fetus. There are, however, no adequate and well-controlled studies in pregnant women. It is also not known whether nizatidine can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. Nizatidine should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers—Studies in lactating women have shown that 0.1% of an oral dose is secreted in human milk in proportion to plasma concentrations. Because of growth depression in pups reared by treated lactating rats, a decision should be made whether to discontinue nursing or the drug, taking into account the importance of the drug to the mother.

Pediatric Use—Safety and effectiveness in children have not been established.

Use in Elderly Patients—Healing rates in elderly patients were similar to those in younger age groups as were the rates of adverse events and laboratory test abnormalities. Age alone may not be an important factor in the disposition of nizatidine. Elderly patients may have reduced renal function.

Adverse Reactions: Clinical trials of varying durations included almost 5,000 patients. Among the more common adverse events in domestic placebo-controlled trials of over 1,900 nizatidine patients and over 1,300 on placebo, sweating (1% vs 0.2%), urticaria (0.5% vs <0.01%), and somnolence (2.4% vs 1.3%) were significantly more common with nizatidine. It was not possible to determine whether a variety of less common events was due to the drug.

Hepatic—Hepatocellular injury (elevated liver enzyme tests or alkaline phosphatase) possibly or probably related to nizatidine occurred in some patients. In some cases, there was marked elevation (>500 IU/L) in SGOT or SGPT and, in a single instance, SGPT was >2,000 IU/L. The incidence of elevated liver enzymes overall and elevations of up to three times the upper limit of normal, however, did not significantly differ from that in placebo patients. Hepatitis and jaundice have been reported. All abnormalities were reversible after discontinuation of Axid.

Cardiovascular—In clinical pharmacology studies, short episodes of asymptomatic ventricular tachycardia occurred in two individuals administered Axid and in three untreated subjects.

CNS—Rare cases of reversible mental confusion have been reported.

Endocrine—Clinical pharmacology studies and controlled clinical trials showed no evidence of antiandrogenic activity due to nizatidine. Impotence and decreased libido were reported with equal frequency by patients on nizatidine and those on placebo. Gynecomastia has been reported rarely.

Hematologic—Fatal thrombocytopenia was reported in a patient treated with nizatidine and another H_2-receptor antagonist. This patient had previously experienced thrombocytopenia while taking other drugs. Rare cases of thrombocytopenic purpura have been reported.

Integumental—Sweating and urticaria were reported significantly more frequently in nizatidine- than in placebo-treated patients. Rash and exfoliative dermatitis were also reported.

Hypersensitivity—As with other H_2-receptor antagonists, rare cases of anaphylaxis following nizatidine administration have been reported. Because cross-sensitivity among this class has been observed, H_2-receptor antagonists should not be administered to those with a history of hypersensitivity to these agents. Rare episodes of hypersensitivity reactions (eg, bronchospasm, laryngeal edema, rash, and eosinophilia) have been reported.

Other—Hyperuricemia unassociated with gout or nephrolithiasis was reported. Eosinophilia, fever, and nausea related to nizatidine have been reported.

Overdosage: Overdoses of Axid have been reported rarely. If overdosage occurs, activated charcoal, emesis, or lavage should be considered along with clinical monitoring and supportive therapy. Renal dialysis for four to six hours increased plasma clearance by approximately 84%.

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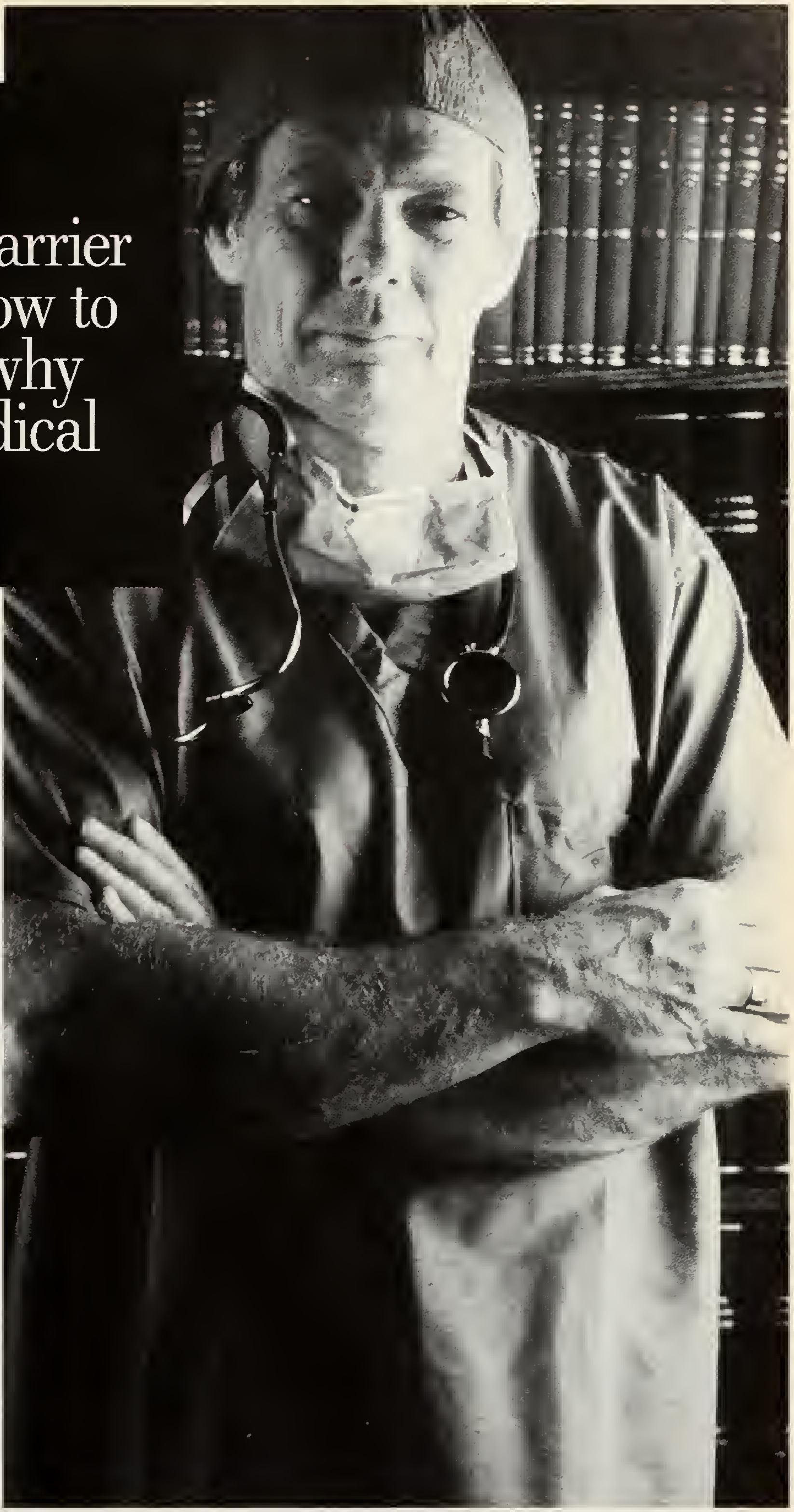

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Your MSMA Directory

Most regular features of Missouri Medicine have been eliminated for this issue only to focus on information used daily by Missouri physicians. Reviewing the Contents page, you will see the following information included in this issue. Here we list a brief explanation of each section:

MSMA Officers, AMA Delegates and Alternates, MSMA Councilors and Vice Councilors —This photo feature helps you to identify the leaders and representatives of MSMA.

Code Number for Component Medical Societies —Every MSMA member is listed in two rosters in this issue: alphabetically and by component medical society. In the alphabetical listing, the number following the physician's name corresponds with the numerical heading where the second listing is found. For example, a physician practicing in Columbia would have the code 026 following his/her alphabetical listing to show that he/she is featured in the Boone County listing in the second roster section. This code number chart also shows the page number of each component medical society section.

Designated Specialty Codes —These abbreviations follow a physician's name to indicate the medical specialty.

Councilor Districts and Counties in Each District —The map shows the geographical divisions for each MSMA Councilor District. The names of the Councilors for those districts and the counties in their area are listed.

Guide to Component Medical Societies —An alphabetical list of Missouri communities and their corresponding component medical society.

MSMA Committee and Commissions — A listing of the members of each committee and commission for 1989-90.

Directory of Medical Specialty Organizations —`A list of each state specialty organization, the president's name and address, and meeting information, if available.

Directory of Metropolitan Specialty Organizations — A list of each metropolitan specialty organization, the president's name and address, and meeting information, if available.

Insurance Plans Available to MSMA Members — Type of coverage, underwriter and administrator is listed for each plan.

Missouri Volunteer Health Agencies — These groups provide assistance in the form of free or specialized equipment, rehabilitation training, counseling, specialized care, or information. These are listed for members' referral purposes.

Alphabetical Roster — All members are listed by their last name followed by the code number and the name of their component medical society.

Component Society Roster — Sectioned according to component medical society, the physician's name, address, telephone number and medical specialty code appear here.

Component Society Executives — A listing of the directors of each component society with a full-time staff, along with the address and phone number of the society's office. ■

The Missouri State Medical Association
1990-91

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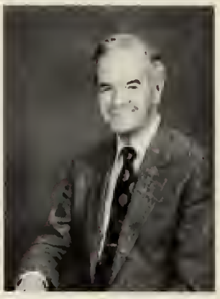
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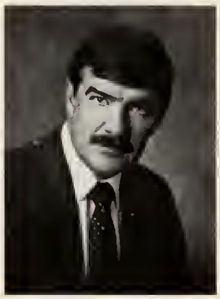

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William Walker, M.D., *Obstetrics/Gynecology*	Springfield
Stephen G. Slocum, M.D., *Ophthalmology*,	St. Louis
John G. Yost, M.D., *Orthopaedics*	Kansas City
J. Regan Thomas, M.D., *Otolaryngology*	St. Louis
Gordon L. Johnson, M.D., *Pathology*	Festus
David Simon, M.D., *Pediatrics*	St. Louis
Raj Nakra, M.D., *Psychiatry*	St. Louis
Richard Heimburger, M.D., *Plastic & Reconstructive Surgery*	Columbia
Julian N. Verde, M.D., *Radiology*	St. Louis
Michael J. Bukstein, M.D., *Surgery (Missouri)*	Hannibal
Micheal J. Chehval, M.D., *Urology*	St. Louis
Duane C. Hellam, M.D., *Councilor Advisor*	Springfield

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Joe E. Belew, M.D.	Chesterfield (1991)
Carl Doerhoff, M.D.	Jefferson City (1991)
Warren C. Lovinger, Jr., M.D.	Nevada (1991)
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Executive Vice President
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3839 Lindell Blvd.
St. Louis, MO 63108
314/371-5225

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of Greater Kansas City
3036 Gillham Road
Kansas City, MO 64108
816/531-8432

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Greene County Medical Society
1200 E. Woodhurst,Bldg. D-200
Springfield, MO 65804
417/887-1017

Lee Gibson
Executive Director
Boone County Medical Society
23 South 8th Street, Suite 100
Columbia, MO 65201
314/874-8985

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Medical Society
1005 N. Kingshighway
Cape Girardeau, MO 63701
314/334-5691

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Heartland Centre, 801 Faraon
St. Joseph, MO 64501
816/271-7517

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P.O. Box 2424
Joplin, MO 64803
417/624-3920

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3036 Gillham Road
Kansas City, MO 64108
816/531-8432

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Medical Director
1034 S. Brentwood, #970
St. Louis, MO 63117
314/725-4004
answering service 314/768-4990

Carl C. Pearman, M.D.
Chairman
1443 N. Robberson #803
Springfield, MO 65802
417/885-4191

Karen Sanders, BSN, RN
Program Coordinator
3839 Lindell Blvd.
St. Louis, MO 63128
314/768-4990

Thomas M. Ahmann, M.D.
Landmark Building
Mexico, MO 65265
314/581-7582

Thomas R. Anderson, M.D.
204 Berrywood Medical Arts Bldg.
3401 Berrywood Dr.
Columbia, MO 65201
314/449-2661

Hugh C. Bartlett, M.D.
1501 E. 10th, Suite B
Rolla, MO 65401
314/364-6051

James R. Criscione Jr., M.D.
3825 S. Kingshighway
St. Louis, MO 63109
314/352-7003

Edward C. Felker, III, M.D.
1118 N. Main
Sikeston, MO 63801
314/471-6992

Edward M. Grim, M.D.
3105 McClelland Blvd.
Joplin, MO 64804
417/623-3703

K.P.S. Kamath, M.D.
35 Doctors' Park
Cape Girardeau, MO 63701
314/334-4002

Donald McIntosh, M.D.
300 S.W. Green Teal
Lee's Summit, MO 64063
816/537-7344

Jo-Ellyn M. Ryall, M.D.
9216 Clayton Road
Suite 105
St. Louis, MO 63124
314/868-7700

Diana J. Spade, M.D.
1900 South National
Suite 1800
Springfield, MO 65804
417/887-6323

Directory of Medical Specialty Organizations

Any specialty group not listed here may send the name of the group's president and the time, date and place of the group's next meeting to: Medical Specialty Listing, MISSOURI MEDICINE, P.O. Box 1028, Jefferson City, MO 65102.

*** The 133rd MSMA Annual Convention will be held April 3-7, 1991 at Crown Center Hotel in Kansas City.**

Specialty	President	Next Meeting
Missouri State Allergy Association	**Charles J. Siegel, M.D.** 6000 N. Oak Trfway, Ste. #102 Gladstone, MO 64118	*MSMA Annual Convention Kansas City
Missouri Society of Anesthesiologists	**Robert N. Miller, M.D.** 551 High Meadows Rd. St. Louis, MO 63131	*MSMA Annual Convention Kansas City
Missouri Dermatological Society, Inc.	**Thelda Kestenbaum, M.D.** University of Kansas Medical Center Room 4023 - C Building 39th & Rainbow Blvd. Kansas City, KS 66103	*MSMA Annual Convention Kansas City
Missouri Chapter American College of Emergency Physicians	**Dean Nierling, M.D.** 2015 N. Dearborn Columbia, MO 65203	August 1, 1990 Tan-Tar-A Lake of the Ozarks
Missouri Academy of Family Physicians	**Patrick B. Harr, M.D.** 114 E. South Hills Dr. Maryville, MO 64468	To be announced
Missouri Society of Internal Medicine	**John Layle, M.D.** 212 Medical Plaza 4320 Wornall Rd. Kansas City, MO 64110	To be announced
Missouri State Neurosurgical Society	**Robert A. Morantz, M.D.** Research Medical Office Tower T411, 6420 Prospect Kansas City, MO 64132	*MSMA Annual Convention Kansas City
Missouri OB/GYN Society	**George J. Fuchs, M.D.** 201 W. Brandon Rd. Columbia, MO 65201	To be announced

Missouri Ophthalmological Society	**Walter F. Davisson, M.D.** 1820 Southwest Blvd. Jefferson City, MO 65102	To be announced
Missouri State Orthopaedic Association	**John G. Yost, Jr., M.D.** 6420 Prospect, Suite T-207 Kansas City, MO 64132	To be announced
Missouri Society of Otolaryngology-Head and Neck Surgery	**Peter G. Smith, M.D., Ph.D.** Midwest Otologic Group 621 S. New Ballas Road St. Louis, MO 63141	November 2, 1990 Ritz Carlton Hotel St. Louis
Missouri Society of Pathologists	**J. Bradley Arthaud, M.D.** P.O. Box 7406 Columbia, MO 65205	*MSMA Annual Convention Kansas City
Missouri Chapter, American Academy of Pediatrics	**Robert Edmonds, M.D.** 1718 S. Ingram Sedalia, MO 65301	November 14-15, 1990 Children's Mercy Hosp., Kansas City
Missouri Association of Plastic & Reconstructive Surgeons	**Richard Heimburger, M.D.** 1504 E. Broadway Columbia, MO 65201	*MSMA Annual Convention Kansas City
Missouri Psychiatric Association	**Joey Jamena, M.D.** Truman Memorial Veterans Hosp. 800 Hospital Drive Columbia, MO 65201	*MSMA Annual Convention Kansas City
Missouri Radiology Society	**M. Ted Moore, M.D.** 119 W. Cherry Nevada, MO 64772	*MSMA Annual Convention Kansas City
Missouri Chapter of American College of Surgeons	**Jack J. Curtis, M.D.** MA312 Health Sciences Center 1 Hospital Drive Columbia, MO 65212	June 21-23, 1990 Lodge of the Four Seasons Lake of the Ozarks
Missouri State Surgical Society	**Joseph J. Hurley, M.D.** 621 S. New Ballas Road St. Louis, MO 63141	*MSMA Annual Convention Kansas City
Missouri Thoracic Society	**Robert Bruce, M.D.** Ste. 16413 Barnes Hospital Plaza St. Louis, MO 63110-1013	October 5-7, 1990 Tan-Tar-A Lake of the Ozarks
Missouri Society of Urologists	**Micheal J. Chehval, M.D.** 641 S. New Ballas Rd. St. Louis, MO 63141	To be announced

Metropolitan Specialty Organizations

Listed here are medical specialty groups located in Missouri's metropolitan areas. The listings are organized by city with the name of the current president or contact person, their address and phone number plus the organization's meeting schedule, if available at press time. Please note that any organization not listed below may submit their standard information for publication to: Metropolitan Specialty Organizations, MISSOURI MEDICINE, P.O. Box 1028, Jefferson City, MO 65102.

Columbia

Mid-Missouri Pathology Society
Ann Havey, M.D., Contact Person
Health Sciences Center
Columbia, MO 65212
314/882-8154
Meeting dates to be announced

Central Missouri Psychiatric Society
Joey Jamena, M.D., President
23 S. 8th Street
Suite 100
Columbia, MO 65201
314/874-8985
Meeting dates to be announced

American College of International Physicians (Missouri Chapter)
Jayendra Shah, M.D., President
23 S. 8th St., Suite 100
Columbia, MO 65201
314/874-8985
Meeting dates to be announced

Kansas City

Greater Kansas City Allergy Association
Gerald L. Goldstein, M.D., President
4601 W. 109th St., Suite 318
Shawnee Mission, KS 66211
913/491-5501
Meetings are quarterly

Kansas City Society of Anesthesiologists
Stephen A. McCray, M.D., President
320 Armour Road, Suite 200
Kansas City, MO 66116
816/221-5050
Meets five times a year

Kansas City Dermatologic Society
David C. Rada, M.D., President
4320 Wornall Road, Suite 728
Kansas City, MO 64111
816/561-3641
Meets 3rd Thursdays except July, March & December

Kansas City Academy of Family Physicians
Lawrence A. Rues, M.D., President
Goppert Family Care Center
6601 Rockhill Road
Kansas City, MO 64131
816/276-7600
Meets quarterly

Kansas City Gynecological Society
Nancy M. McBride, M.D., President
4400 Broadway, Suite 302
Kansas City, MO 64111
816/753-7060
Meets 3rd Thursday every other month

Greater Kansas City Society of Internists
Richard B. Darr, M.D., President
Shawnee Mission Medical Center
9100 W. 74th Street
Shawnee Mission, KS 66201
913/676-2097
Meets in Feb., Apr., Sept., Nov.

Great Plains Occupational Medical Association
Gregory L. Bono, M.D., President
Industrial Clinic West
8704 Bourgade
Lenexa, KS 66219
913/492-1450
Meets as called

Kansas City Orthopedic Society
James R. Neff, M.D., President
University of Kansas Medical Center
39th & Rainbow Blvd.
Kansas City, KS 66103
913/588-6198
Meets twice a year

Kansas City Society of Ophthalmology & Otolaryngology
Thomas R. Cotton, M.D., President
3725 Broadway
Kansas City, MO 64111
816/931-2606
Meetings are quarterly

Kansas City Society of Pathologists
Dan A. Waxman, M.D., President
Community Blood Center
4040 Main
Kansas City, MO 64111
913/753-4040
Meets 1st Wednesday Sept. — May

Greater Kansas City Pediatric Society
Starks Williams, M.D., President
1734 E. 63rd St., Suite 205
Kansas City, MO 64110
816/361-6699
Meets monthly on 4th Wednesday

Western Missouri Psychiatric Society
Frederick S. Mittleman, M.D., President
Research Psychiatric Center
2323 E. 63rd St., P.O. Box 7100
Kansas City, MO 64113
913/523-8425
Meets quarterly

Greater Kansas City Radiological Society
Maynard C. Jones, Jr., M.D., President
4320 Wornall Road, Suite 128
Kansas City, MO 64111
816/561-5858
Meets 2nd Wednesdays, Oct. & Nov., Jan. — Apr.

Kansas City Surgical Society
L. Beaty Pemberton, M.D., President
Truman Medical Center
2301 Holmes
Kansas City, MO 64108
816/556-3505
Meets 3rd Wednesday January, March, May, November

Kansas City Urological Society
Robert L. Elkins, M.D., President
6650 Troost, Suite 206
Kansas City, MO 64131
816/333-0500
Meets monthly except summer and December

St. Louis

St. Louis Society of Anesthesiologists
Alex K. Mills, M.D., President
3015 N. Ballas Road
St. Louis, MO 63131
314/432-1212
Meeting dates to be announced

St. Louis Cardiac Club
Martin Schwarze, M.D., President
3660 Vista Avenue
St. Louis, MO 63110
314/577-6190
Meeting dates to be announced

St. Louis Society of Colon and Rectal Surgery
Francis J. Burns, M.D., President
216 S. Kingshighway Blvd.
St. Louis, MO 63110
314/454-7177
Meeting dates to be announced

St. Louis Dermatological Society
Lawrence E. Samuels, M.D., President
7511 Big Bend Blvd.
St. Louis, MO 63119
314/962-4511
Meeting dates to be announced

The St. Louis Ear, Nose and Throat Club
William P. Lampros, M.D., President
4911 Barnes Hospital Plaza
St. Louis, MO 63110
314/362-7524
Meeting dates to be announced

St. Louis Academy of Family Physicians
Bartolome C. Kairuz, M.D., President
615 S. New Ballas Road
St. Louis, MO 63141
314/569-6010
Meeting dates to be announced

St. Louis Gastrointestinal Endoscopy Society
Burton A. Shatz, M.D., President
3009 N. Ballas Road
St. Louis, MO 63131
314/432-1111
Meeting dates to be announced

St. Louis Gynecological Society
Octavio R. Chirino, M.D., President
9147 Watson Road
St. Louis, MO 63126
314/963-1040
Meeting dates to be announced

St. Louis Society of Internal Medicine
John M. Cary, M.D., President
222 S. Woods Mill Rd., Suite 750 N
Chesterfield, MO 63017
314/275-8600
Meeting dates to be announced

St. Louis Society of Medical Oncology
Paul J. Petruska, M.D., President
3009 N. Ballas Road
St. Louis, MO 63131
314/432-1111
Meeting dates to be announced

St. Louis Society for Neurological Sciences
John B. Selhorst, M.D., President
6400 Clayton Road
St. Louis, MO 63117
314/781-0024
Meeting dates to be announced

St. Louis Ophthalmological Society
Stephen R. Waltmann, M.D., President
1245 Graham Road
St. Louis, MO 63031
314/837-3667
Meeting dates to be announced

St. Louis Orthopedic Society
Clayton Perry, M.D., President
621 S. New Ballas Road
St. Louis, MO 63141
314/569-6120
Meeting dates to be announced

St. Louis Pathological Society
Daphne DeMello, M.D., President
615 S. New Ballas Road
St. Louis, MO 63141
314/569-6120
Meeting dates to be announced

St. Louis Pediatric Society
Elliot Farberman, M.D., President
400 S. Kingshighway Blvd.
St. Louis, MO 63110
314/454-6087
Meeting dates to be announced

St. Louis Society of Physical Medicine & Rehabilitation
Franz U. Steinberg, M.D., President
12303 DePaul Drive
St. Louis, MO 63044
314/344-6000
Meeting dates to be announced

St. Louis Area Society of Plastic Surgeons
Meredith C. Payne, M.D., President
222 S. Woods Mill Road
Chesterfield, MO 63017
314/878-7770
Meeting dates to be announced

Eastern Missouri Psychiatric Society
Ashok R. Mallya, M.D., President
1034 S. Brentwood Blvd.
St. Louis, MO 63117
314/726-6610
Meeting dates to be announced

Greater St. Louis Society of Radiologists
Bruce Walz, M.D., President
6420 Clayton Road
St. Louis, MO 63117
314/768-8250
Meeting dates to be announced

St. Louis Rheumatology Association
Robert E. Kuhlman, M.D., President
6651 Chippewa Street
St. Louis, MO 63141
314/644-4411
Meeting dates to be announced

St. Louis Surgical Society
Donald Judd, M.D., President
621 S. New Ballas Road
St. Louis, MO 63141
314/567-9930
Meeting dates to be announced

St. Louis Thoracic Surgical Society
John P. Marbarger, M.D., President
3635 Vista, P.O. Box 15250
St. Louis, MO 63110
314/577-8360
Meeting dates to be announced

St. Louis Urological Society
David Hardy, M.D., President
911 S. Brentwood Blvd.
St. Louis, MO 63105
314/725-6551
Meeting dates to be announced

Gateway Vascular Society
Curt M. Vogel, M.D., President
3635 Vista Avenue
St. Louis, MO 63110
314/577-8310
Meeting dates to be announced

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Insurance Options For MSMA Members

Type of Coverage	Underwriter	Administrator
Professional Liability Insurance. Claims made coverage available from $200,000/$600,000 to $2/$4 million. Endorsed by MSMA. Premises liability also available.	MOMEDICO (Missouri Medical Insurance Company)	MOMEDICO 10795 Watson Road St. Louis, MO 63127 1-800-392-8039
Personal Disability Income. Benefits available up to $6,000 per month. Life-time accident/to age 65 sickness coverage. Residual disability benefit available with cost of living increase provision. An individual contract with special renewal guarantees.	Commercial Insurance Company of Newark, N.J.	Sedgwick James of Missouri, Inc. 700 Corporate Park Drive Suite 200 Clayton, MO 63105 314/863-7777
Overhead Expense Insurance. Benefits up to $10,000 per month. Optional 15-day or 30-day waiting periods after which payment begins from first day of disability and continues up to 2 years.	Commercial Insurance Company of Newark, N.J.	Sedgwick James of Missouri, Inc. (See above)
Accidental Death and Dismemberment. Up to $100,000 coverage. May include spouse, children and employees.	Commercial Insurance Company of Newark, N.J.	Sedgwick James of Missouri, Inc. (See above)
Hospital Indemnity Plan. $50 to $200 per day while hospitalized in addition to any other insurance. Family coverage available.	Commercial Insurance Company of Newark, N.J.	Sedgwick James of Missouri, Inc. (See above)
Term Life Plan. Members and employees under age 60 may enroll for amounts up to $250,000. Spouses coverage, one half amount of member or employee, up to $100,000. Dependent children may be insured for $2,500.	Mutual Life Insurance Company of New York	Forrest T. Jones and Co., Inc. 3130 Broadway P.O. Box 418131 Kansas City, MO 64141 1-800-892-7272
Accidental Death/Dismemberment. $25,000 guaranteed up to $100,000.	Mutual Life Insurance Company of New York	Forrest T. Jones and Co., Inc. (See Above)
Major Medical Plan. Pays up to a life-time of $1,000,000. Deductibles of $200, $500, $1,000. Coverage available to members, employees and dependents, with survivor benefits. Extremely low cost policy.	Mutual Life Insurance Company of New York	Forrest T. Jones and Co., Inc. (See above)
Workers' Compensation Insurance. A dividend program which returns premiums as earned each year, based on cost of claims from all participating physicians. Since 1983, dividends have ranged from 5% to 35% per year.	Casualty Reciprocal Exchange, Member of Dodson Group	Dodson Group 92nd and State Line Kansas City, MO 64114 1-800-825-3760
Retirement and Financial Planning. Retirement services including investment advice, plan administration and IRS approved prototype plan documents. Financial planning including estate, retirement, investment, income tax and insurance analysis.	MonetaMed, a Moneta Group Program	Moneta Group, Inc. 700 Corporate Park Drive Suite 300 St. Louis, MO 63105 1-800-833-1301 in St. Louis 314/726-2300

Missouri Volunteer Health Agencies

Patients of MSMA members are eligible, in some instances, to receive assistance from various volunteer health agencies in the state. Assistance may be in the form of free or subsidized, specialized care, or information. In an effort to assist MSMA members in attaining assistance for their patients, the following list of Missouri volunteer health agencies has been compiled. In some cases, a statewide organization is listed. In instances in which an organization is limited to a certain portion of the state, several organizations may be listed under one heading.

Arthritis

Arthritis Foundation, Eastern Missouri Chapter
7315 Manchester, St. Louis 63143
314-644-3488

Arthritis Foundation, Western Missouri-Greater Kansas City Chapter
8301 State Line, Suite 200, Kansas City 64114
816-361-7002

Arthritis Institute of Greater Kansas City
6601 Rockhill Rd., Kansas City 64131
816-444-5899

Asthma and Allergy

Asthma and Allergy Foundation of America, St. Louis Chapter
222 South Central, Suite 600, St. Louis 63105
314-726-6866

Birth Defects

March of Dimes, Northern Missouri Chapter
1310 Business 63 South, Columbia 65201
314-449-0573

Blood Transfusion and Tissue Bank

Missouri/Illinois Regional Blood Services
4050 Lindell, St. Louis 63108
314-658-2000

Cancer

American Cancer Society, Missouri Division, Inc.
P.O. Box 1066, 3322 American Ave.,
Jefferson City 65102
314-893-4800 or 1-800-ACS-2345

Cerebral Palsy

United Cerebral Palsy Association of Missouri
925 South Country Club Drive, Suite A-1
Jefferson City 65109
314-893-5454

Cystic Fibrosis

Cystic Fibrosis Foundation, Gateway Chapter
7730 Carondelet, Suite 135, St. Louis 63105
314-721-2490

Cystic Fibrosis Foundation,
Heart of America Chapter
8080 Ward Parkway, #300, Kansas City 64114
816-363-5636

Diabetes

American Diabetes Association, Columbia Region
206 Austin, P.O. Box 11
Columbia 65205
314-443-8611

American Diabetes Association,
Heart of America Region
9201 Ward Parkway, Kansas City 64114
816-361-3361

American Diabetes Association,
Missouri Affiliate, Inc.
213 Adams, Suite 201, Jefferson City 65101
314-636-5552

American Diabetes Association, Ozark Region
Cox Medical Center North
1423 North Jefferson, J-200
Springfield 65802
417-864-5091

American Diabetes Association
Missouri Affiliate Inc./St. Louis Region
1780 S. Brentwood Blvd.
St. Louis 63144
314-968-3196

Disabled Children and Adults

Missouri Easter Seal Society, Inc.
1982 Concourse, Ste. 100, St. Louis 63146
314-569-0822

Epilepsy

Epilepsy Foundation St. Louis Region
7305 Manchester, St. Louis 63143
314-645-6969

Epilepsy Foundation, Heart of America Region
4949 Rockhill Rd., Kansas City 64110
816-276-8940

General Health

HealthLine, Boone Hospital Center,
1600 E. Broadway, Columbia 65201
1-800-872-9008 or 314-875-6400

Heart

American Heart Association, Missouri Affiliate, Inc.
P.O. Box Q, 105 E. Ash, Suite 2, Columbia 65205
314-442-3193 or 1-800-323-7883

Hemophilia

Bi-State Hemophilia Association
3127 A South Grant, St. Louis 63118
314-771-6080

Kidney

National Kidney Foundation of Eastern Missouri
and Metro East, Inc.
1139 Olivette Executive Parkway,
Suite 101, St. Louis 63132
1-800-727-0240 or 314-993-4363

National Kidney Foundation of Kansas
and Western Missouri
One East 34th St., Kansas City 64111
816-756-2002

Lungs

American Lung Association, Springfield Branch
1835 S. Stewart, Springfield 65804
417-883-7177

American Lung Association, Central Missouri Branch
P.O. Box 1321, Columbia 65205
314-874-2616

American Lung Association of Eastern Missouri
1118 Hampton Ave., St. Louis 63139-3196
314-645-5505 or 1-800-467-5864
FAX # 314/645-7128

American Lung Association of Western Missouri
2007 Broadway, Kansas City 64108
816-842-5242

American Lung Association, Southeast Missouri Branch
P.O. Box 513, Cape Girardeau 63701
314-334-4007

Multiple Sclerosis

Multiple Sclerosis Society, Gateway Area Chapter
915 Olive St., Suite 310, St. Louis 63101
314-241-8285 or 1-800-628-1753

Multiple Sclerosis Society, Mid-America Chapter
P.O. Box 2292, Shawnee Mission, KS 66201
1-800-346-3026 ext. 271
913-432-3926

Multiple Sclerosis Society, Mid-Missouri Branch,
Gateway Chapter, 1206 Business Loop 70 West,
Suite E, Columbia 65202
314-875-6767

Multiple Sclerosis Society, St. Joseph Branch
Heartland Hospital West, Room 238,
St. Joseph 64501
816-364-6290

Multiple Sclerosis Society, Ozark Branch
2149 S. Oak Grove, Springfield 65804
417-882-8128

Muscular Dystrophy

Muscular Dystrophy Association,
Central Missouri Chapter
1301 Vandiver, Suite U, Columbia 65202
314-449-1057

Muscular Dystrophy Association, Inc.
11520 St. Charles Rock Rd., Bridgeton 63034
314-298-9516

Muscular Dystrophy Association, Inc.,
Greater Ozarks Chapter
435 S. Union, Suite K, Springfield 65802-2657
417-866-5117

Muscular Dystrophy Association, Inc.,
Missouri Valley Chapter
301 E. Armour, Suite 305, Kansas City 64111
816-931-7750

Muscular Dystrophy Association, Inc.,
Mississippi Valley Chapter
1023 S. Big Bend Blvd., St. Louis 63117
314-644-2828

Muscular Dystrophy Association, Twin Rivers Chapter
354 Silver Springs Road, Cape Girardeau 63701
314-335-4400

Myasthenia Gravis

Myasthenia Gravis Foundation, Inc.,
Greater Kansas City Chapter
4949 Rockhill Rd., Kansas City 64110
816-276-8310
Also, contact your local Muscular Dystrophy office.

Neurofibromatosis

The National Neurofibromatosis Foundation, Inc.,
Missouri Chapter
14753 Dovershire Ct., Chesterfield 63017
314-391-7872

Red Cross

American Red Cross, Greater Kansas City Chapter
211 W. Armour, Kansas City 64111
816-932-6000

American Red Cross, Missouri/Illinois
Regional Blood Services
4050 Lindell Blvd., St. Louis 63108
314-658-2000

Retarded Citizens

Barry-Lawrence ARC
P.O. Box 244, Monett 65708
417-235-3596

Clay-Platte ARC
7211 N. Broadway, Kansas City 64118
816-436-1704

Gentry County ARC
P.O. Box 219, Albany 64402
816-726-4155

Greene County Association for Retarded
Children, Inc.
Activities Ctr., 1501 East Pythian, Springfield 65802
417-864-7887

Joplin Area ARC
1718 Garrison, Carthage 64836
417-358-2980

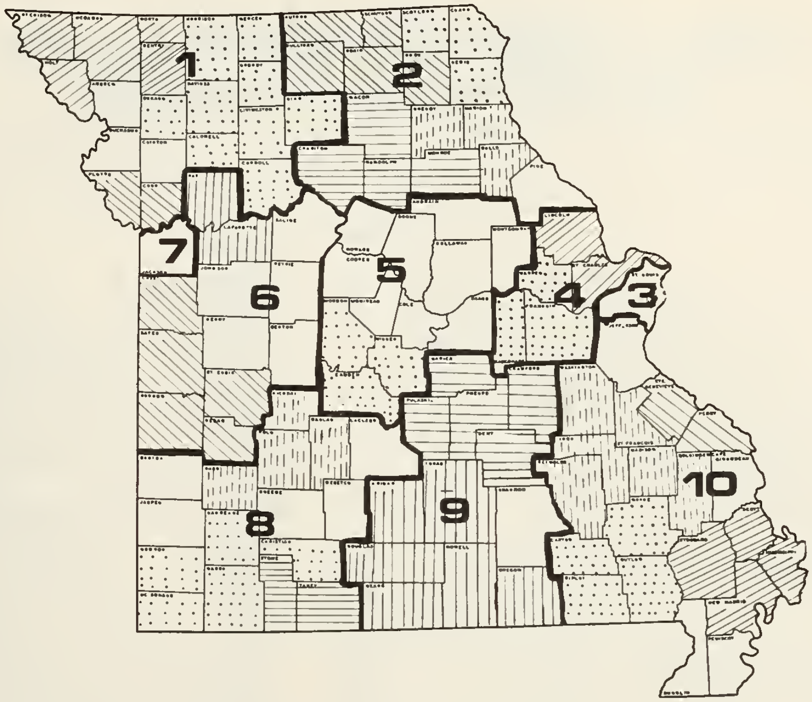
St. Charles County ARC
P.O. Box 9634, 613 Westridge Drive
O'Fallon 63366
314-281-1903

Stoddard County ARC
1318 W. Grant, Dexter 63841
314-624-8525

Sudden Infant Death Syndrome

SIDS Resources, Inc.
929 DeMun, St. Louis 63105
1-800-421-3511 (Missouri Toll Free)
314-862-3033 in St. Louis

Councilor Districts and Counties in Each District



DISTRICT	COUNCILOR	COUNTIES
FIRST	Stephen Vilmer, M.D., *Shawnee Mission, KS*	Andrew, Atchison, Buchanan, Caldwell, Carroll, Clay, Clinton, Daviess, DeKalb, Gentry, Grundy, Harrison, Holt, Linn, Livingston, Mercer, Nodaway, Platte and Worth
SECOND	Robert V. Tompson, M.D., *Moberly*	Adair, Chariton, Clark, Knox, Lewis, Macon, Marion, Monroe, Pike, Putnam, Ralls, Randolph, Schuyler, Scotland, Shelby and Sullivan
THIRD	William H. Huffaker, M.D., *St. Louis* Arturo Montes, M.D., *Florissant* Daniel O'Sullivan, *St. Louis* Frederick D. Peterson, M.D., *St. Louis* David Wilkinson, M.D., *St. Louis* Carol F. Williams, M.D., *St. Louis*	St. Louis County and City
FOURTH	J. Michael Conoyer, M.D., *St. Peters*	Franklin, Gasconade, Lincoln, St. Charles and Warren
FIFTH	Jerry Murrell, M.D., *Columbia* Ruth Kauffman, M.D., *Versailles*	Audrain, Boone, Callaway, Camden, Cole, Cooper, Howard, Miller, Moniteau, Montgomery, Morgan and Osage*
SIXTH	A. J. Campbell, M.D., *Sedalia*	Bates, Benton,* Cass, Cedar, Henry, Johnson, Lafayette, Pettis, Ray, St. Clair, Saline and Vernon
SEVENTH	Steven E. Buie, M.D., *Lee's Summit* William E. Dorzab, M.D., *Kansas City* Frederick W. Hahn, M.D., *Kansas City* Robert T. Gibbons, Jr., M.D., *Overland Park, KS*	Jackson
EIGHTH	David W. Hall, M.D., *Rogersville* Duane Hellam, M.D., *Springfield*	Barry, Barton, Christian, Dade, Dallas, Greene, Hickory, Jasper, Lawrence, Laclede, McDonald, Newton, Polk, Stone, Taney and Webster
NINTH	David O. Barbe, M.D., *Mountain Grove*	Crawford, Dent, Douglas, Howell, Maries, Oregon, Ozark, Phelps, Pulaski, Shannon,*Texas and Wright
TENTH	Melvin C. Kasten, M.D., *Cape Girardeau*	Bollinger, Butler, Cape Girardeau, Carter, Dunklin, Iron, Jefferson, Madison, Mississippi, New Madrid, Pemiscot, Perry, Reynolds, Ripley, St. Francois, Ste. Genevieve, Scott, Stoddard, Washington and Wayne

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* Counties with no medical organization.

Code Numbers

for Component Medical Societies

Code	Society	Page
002	MSMA Only	554
010	Andrew	554
014	Audrain	554
018	Barton	555
026	Boone (includes Cooper-Howard)	555
030	Buchanan	559
034	Butler-Wayne-Ripley-Carter	561
038	Callaway	561
042	Cape Girardeau	561
046	Chariton-Macon-Monroe-Randolph	563
050	Clay-Platte	564
054	Clinton	565
058	Cole (includes Moniteau-Osage)	565
066	Dallas-Hickory-Polk-Dade	567
070	Dunklin	567
074	Franklin-Gasconade-Warren	567
078	Grand River (Caldwell-Carroll-Daviess-DeKalb-Grundy-Harrison-Linn Mercer-Livingston)	568
082	Greene	568
086	Henry	574
102	Jasper	574
106	Jefferson	576
110	Johnson	576
115	Laclede	576
118	Lafayette-Ray	576
120	Lake of the Ozarks (Camden-Miller-Morgan)	577
125	Metro Med - Greater Kansas City	577
135	Mid-Missouri (Crawford-Dent-Maries-Phelps-Pulaski)	593
138	Mineral Area (Bollinger-Iron-Madison-Reynolds-St. Francois-Washington)	593
146	Montgomery	594
148	North Central (Adair-Knox-Putnam-Schuyler-Sullivan)	594
150	Northeast (Clark-Lewis-Marion-Ralls-Scotland-Shelby)	594
158	Northwest (Atchison-Gentry-Holt-Nodaway-Worth)	594
166	Ozarks (Barry-Christian-Lawrence-McDonald-Newton)	595
170	Pemiscot	595
174	Perry-Ste. Genevieve	595
178	Pettis	595
186	Pike	596
189	St. Charles-Lincoln	596
190	St. Louis Metropolitan	597
198	Saline	623
	SEMO (Mississippi-New Madrid-Scott-Stoddard)	623
206	South Central (Douglas-Howell-Oregon-Ozarks-Texas-Wright)	624
208	Tri-Lakes (Stone-Taney)	624
210	Webster	624
214	West Central (Bates-Cass-Cedar-St. Clair-Vernon)	624
215	Resident Physician Section	625
216	St. Louis University	630
218	University of Missouri-Columbia	633
220	University of Missouri-Kansas City	635
222	Washington University	637

Designated Specialty Codes

*The following specialties are recognized by the American Medical Association.**

A	Allergy
ADL	Adolescent Medicine
ABS	Abdominal Surgery
AI	Allergy and Immunology
AM	Aerospace Medicine
AN	Anesthesiology
ATP	Anatomic Pathology
BLB	Bloodbanking
CCM	Critical Care Medicine
CD	Cardiovascular Diseases
CDS	Cardiovascular Surgery
CHN	Child Neurology
CHP	Child Psychiatry
CLP	Clinical Pathology
CMP	Chemical Pathology
CRS	Colon and Rectal Surgery
D	Dermatology
DIA	Diabetes
DLI	Diagnostic Laboratory Immunology
DMP	Dermatopathology
DR	Diagnostic Radiology
EM	Emergency Medicine
END	Endocrinology
FOP	Forensic Pathology
FP	Family Practice
FPS	Facial Plastic Surgery
GE	Gastroenterology
GER	Geriatrics
GO	Gynecological Oncology
GP	General Practice
GPM	General Preventive Medicine
GS	General Surgery
GYN	Gynecology
HEM	Hematology
HNS	Head and Neck Surgery
HS	Hand Surgery
ID	Infectious Diseases
IG	Immunology
IM	Internal Medicine
IP	Immunopathology
LM	Legal Medicine
MFM	Maternal and Fetal Medicine
MM	Medical Microbiology
N	Neurology
NA	Neuropathology
ND	Neoplastic Diseases
NEP	Nephrology
NM	Nuclear Medicine
NPM	Neonatal-Perinatal Medicine
NR	Nuclear Radiology
NS	Neurological Surgery
NTR	Nutrition
OBG	Obstetrics and Gynecology
OBS	Obstetrics
OM	Occupational Medicine
ON	Oncology
OPH	Ophthalmology
ORS	Orthopedic Surgery
OS	Other, i.e., a specialty other than those listed here.
OTO	Otorhinolaryngology
P	Psychiatry
PA	Clinical Pharmacology
PD	Pediatrics
PDA	Pediatric Allergy
PDC	Pediatric Cardiology
PDE	Pediatric Endocrinology
PDP	Pediatric Pulmonology
PDR	Pediatric Radiology
PDS	Pediatric Surgery
PH	Public Health
PHO	Pediatric Hematology-Oncology
PM	Physical Medicine and Rehabilitation
PNP	Pediatric Nephrology
PS	Plastic Surgery
PSF	Facial Plastic Surgery
PTH	Pathology
PUD	Pulmonary Diseases
PYA	Psychoanalysis
R	Radiology
REN	Reproductive Endocrinology
RHU	Rheumatology
RIP	Radioisotopic Radiology
RO	Radiation Oncology
TR	Therapeutic Radiology
TRS	Traumatic Surgery
TS	Thoracic Surgery
U	Urology
US	Urological Surgery
VS	Vascular Surgery

Note: No code will appear for those physicians who have not designated a specialty.

* **This list was updated in March 1990.**

Guide to Component Medical Societies

A

Town	County	Medical Society
Advance	Stoddard	SEMO
Albany	Gentry	Northwest Missouri
Appleton City	St. Clair	West Central
Arnold	Jefferson	Jefferson
Arrow Rock	Saline	Saline
Ash Grove	Greene	Greene
Ashland	Boone	Boone
Aurora	Lawrence	Ozarks
Ava	Douglas	South Central

B

Town	County	Medical Society
Ballwin	St. Louis	St. Louis Metropolitan
Barnhart	St. Louis	St. Louis Metropolitan
Bethany	Harrison	Grand River
Belton	Cass	West Central
Blue Springs	Jackson	Metro Med of Greater KC
Bolivar	Polk	Dallas-Hickory-Polk-Dade
Bonne Terre	St. Francois	Mineral Area
Boonville	Cooper	Boone
Branson	Taney	Tri-Lakes
Brentwood	St. Louis	St. Louis Metropolitan
Bridgeton	St. Louis	St. Louis Metropolitan
Brookfield	Linn	Grand River
Brunswick	Chariton	Chariton-Macon-Monroe-Randolph
Buffalo	Dallas	Dallas-Hickory-Polk-Dade
Butler	Bates	West Central

C

Town	County	Medical Society
Cabool	Texas	South Central
California	Moniteau	Cole
Camdenton	Camden	Lake of the Ozarks
Cape Girardeau	Cape Girardeau	Cape Girardeau
Carrollton	Carroll	Grand River
Carthage	Jasper	Jasper
Caruthersville	Pemiscot	Pemiscot
Cassville	Barry	Ozarks
Centralia	Boone	Boone
Charleston	Mississippi	SEMO
Chesterfield	St. Louis	St. Louis Metropolitan

C

Town	County	Medical Society
Chillicothe	Livingston	Grand River
Clarkson Valley	St. Louis	St. Louis Metropolitan
Clayton	St. Louis	St. Louis Metropolitan
Clinton	Henry	Henry
Columbia	Boone	Boone
Concordia	Lafayette	Lafayette-Ray
Crestwood	St. Louis	St. Louis Metropolitan
Creve Coeur	St. Louis	St. Louis Metropolitan
Crystal City	Jefferson	Jefferson
Cuba	Crawford	Mid-Missouri

D

Town	County	Medical Society
Deepwater	Henry	Henry
Desloge	St. Francois	Mineral Area
DeSoto	Jefferson	Jefferson
Dexter	Stoddard	SEMO
Doniphan	Ripley	Butler-Wayne-Ripley-Carter

E

Town	County	Medical Society
East Prairie	Mississippi	SEMO
Eldon	Miller	Lake of the Ozarks
El Dorado Springs	Cedar	West Central
Ellisville	St. Louis	St. Louis Metropolitan
Elsbury	Lincoln	St. Charles-Lincoln
Eureka	St. Louis	St. Louis Metropolitan
Excelsior Springs	Clay	Clay-Platte

F

Town	County	Medical Society
Fairfax	Atchison	Northwest Missouri
Farmington	St. Francois	Mineral Area
Fayette	Howard	Boone
Fenton	St. Louis	St. Louis Metropolitan
Festus	Jefferson	Jefferson
Flat River	St. Francois	Mineral Area
Florissant	St. Louis	St. Louis Metropolitan
Forsyth	Taney	Tri-Lakes
Fort Leonard Wood	Pulaski	Mid-Missouri
Fredericktown	Madison	Mineral Area
Fulton	Callaway	Callaway

Town	County	Medical Society
	G	
Galena	Jackson	Metro Med of Greater KC
Gallatin	Daviess	Grand River
Gladstone	Clay	Clay-Platte
Glasgow	Howard	Boone
Glendale	St. Louis	St. Louis Metropolitan
Gower	Buchanan	Buchanan
Grandview	Jackson	Metro Med of Greater KC
Greenwood	Jackson	Metro Med of Greater KC
	H	
Hamilton	Caldwell	Grand River
Hannibal	Marion	Northeast
Harrisonville	Cass	West Central
Hayti	Pemiscot	Pemiscot
Hazelwood	St. Louis	St. Louis Metropolitan
Herculaneum	Jefferson	Jefferson
Hermann	Gasconade	Franklin-Gasconade-Warren
Higginsville	Lafayette	Lafayette-Ray
High Ridge	St. Louis	St. Louis Metropolitan
Holden	Johnson	Johnson
Hornersville	Dunklin	Dunklin
House Springs	St. Louis	St. Louis Metropolitan
Houston	Texas	South Central
Hughesville	Pettis	Pettis
Huntsville	Randolph	Chariton-Macon-Monroe-Randolph
	I	
Independence	Jackson	Metro Med of Greater KC
Ironton	Iron	Mineral Area
	J	
Jackson	Cape Girardeau	Cape Girardeau
Jefferson City	Cole	Cole
Joplin	Jasper	Jasper
	K	
Kansas City	Jackson	Metro Med of Greater KC
Kennett	Dunklin	Dunklin
Kimberling City	Stone	Tri-Lakes
Kirksville	Adair	North Central
Kirkwood	St. Louis	St. Louis Metropolitan

Town	County	Medical Society
	L	
Ladue	St. Louis	St. Louis Metropolitan
LaGrange	Lewis	Northeast
Lake Ozark	Miller	Lake of the Ozarks
Lake Sherwood	St. Louis	St. Louis Metropolitan
Lake St. Louis	St. Lous	St. Louis Metropolitan
Lamar	Barton	Barton
Lebanon	Laclede	Laclede
Lee's Summit	Jackson	Metro Med of Greater KC
Lexington	Lafayette	Lafayette-Ray
Liberty	Clay	Clay-Platte
Linn	Osage	Cole
Louisiana	Pike	Pike
	M	
Macon	Macon	Chariton-Macon-Monroe-Randolph
Malden	Dunklin	Dunklin
Manchester	St. Louis	St. Louis Metropolitan
Mansfield	Wright	South Central
Marceline	Linn	Grand River
Marshall	Saline	Saline
Marshfield	Webster	Webster
Marthasville	Warren	Franklin-Gasconade-Warren
Maryland Heights	St. Louis	St. Louis Metropolitan
Maryville	Nodaway	Northwest Missouri
Mexico	Audrain	Audrain
Moberly	Randolph	Chariton-Macon-Monroe-Randolph
Monett	Barry	Ozarks
Mound City	Holt	Northwest Missouri
Mount Vernon	Lawrence	Ozarks
Mountain Grove	Wright	South Central
	N	
Neosho	Newton	Ozarks
Nevada	Vernon	West Central
New Bloomfield	Cole	Cole
New Haven	Franklin	Franklin-Gasconade-Warren
New London	Ralls	Northeast
Nixa	Christian	Ozarks
Normandy	St. Louis	St. Louis Metropolitan
North Kansas City	Clay	Clay-Platte
	O	
Odessa	Jackson	Metro Med of Greater KC

Town	County	Medical Society
	O	
O'Fallon	St. Charles	St. Charles-Lincoln
Osage Beach	Camden	Ozarks
Osceola	St. Clair	West Central
Ozark	Christian	Ozarks
	P	
Pacific	Franklin	Franklin-Gasconade-Warren
Palmyra	Marion	Northeast
Paris	Monroe	Chariton-Macon-Monroe-Randolph
Parkville	Platte	Clay-Platte
Perryville	Perry	Perry-St. Genevieve
Piedmont	Wayne	Butler-Wayne-Ripley-Carter
Pierce City	Lawrence	Ozarks
Platte City	Platte	Clay-Platte
Plattsburg	Clinton	Clinton
Pleasant Hill	Cass	West Central
Poplar Bluff	Butler	Butler-Wayne-Ripley-Carter
Portageville	New Madrid	SEMO
Potosi	Washington	Mineral Area
Puxico	Stoddard	SEMO
	R	
Raymore	Cass	West Central
Raytown	Jackson	Metro Med of Greater KC
Richmond	Ray	Lafayette-Ray
Richmond Heights	St. Louis	St. Louis Metropolitan
Rocheport	Boone	Boone
Rock Hill	St. Louis	St. Louis Metropolitan
Rock Port	Atchison	Northwest
Rogersville	Webster	Webster
Rolla	Phelps	Mid-Missouri
Rosendale	Andrew	Andrew
	S	
St. Ann	St. Louis	St. Louis Metropolitan
St. Charles	St. Charles	St. Charles-Lincoln
St. Clair	Franklin	Franklin-Gasconade-Warren
Ste. Genevieve	Ste. Genevieve	Perry-Ste. Genevieve
St. Joseph	Buchanan	Buchanan
St. Louis	St. Louis	St. Louis Metropolitan
St. Peters	St. Charles	St. Charles-Lincoln
Salem	Dent	Mid-Missouri
Sarcoxie	Jasper	Jasper
Savannah	Andrew	Andrew
Scott City	Scott	SEMO
Sedalia	Pettis	Pettis
Senath	Dunklin	Dunklin
Shelbina	Shelby	Northeast Missouri
Shell Knob	Barry	Ozarks
Sikeston	Scott	SEMO
Smithville	Clay	Clay-Platte
Springfield	Greene	Greene
Stanberry	Gentry	Northwest Missouri
Steelville	Crawford	Mid-Missouri
Strafford	Greene	Greene
Sullivan	Franklin	Franklin-Gasconade-Warren
Sweet Springs	Saline	Saline
	T	
Tarkio	Atchison	Northwest Missouri
Thayer	Oregon	South Central
Town and Country	St. Louis	St. Louis Metropolitan
Trenton	Grundy	Grand River
Troy	Lincoln	St. Charles-Lincoln
Turners	Greene	Greene
	U	
Union	Franklin	Franklin-Gasconade-Warren
University City	St. Louis	St. Louis Metropolitan
	V	
Valley Park	St. Louis	St. Louis Metropolitan
Van Buren	Carter	Butler-Wayne-Ripley-Carter
Versailles	Morgan	Lake of the Ozarks
	W	
Warrensburg	Johnson	Johnson
Warrenton	Warren	Franklin-Gasconade-Warren
Washington	Franklin	Franklin-Gasconade-Warren
Waverly	Lafayette	Lafayette-Ray
Waynesville	Pulaski	Mid-Missouri
Webb City	Jasper	Jasper
Webster Groves	St. Louis	St. Louis Metropolitan
Wellsville	Montgomery	Montgomery
Wentzville	St. Charles	St. Charles-Lincoln
West Plains	Howell	South Central
Whitewater	Cape Girardeau	Cape Girardeau
Willow Springs	Howell	South Central
Windsor	Henry	Henry

MSMA Annual Directory

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II. By Component Society
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Alphabetical Roster of Members

Including name and code number of each member's component medical society.

A

Aaron, Geo	METRO MED	125
Abada, Roland	ST. LOUIS METROP.	190
Abadir, Rushdy	BOONE	026
Abbott, David A	ST. LOUIS METROP.	190
Abdou, Nancy L	METRO MED	125
Abel, Charles C	ST. LOUIS METROP.	190
Abelardo, Miguel I	ST. LOUIS METROP.	190
Abele, Wm A	BOONE	026
Abella, Ben Zulueta Z	METRO MED	125
Abend, Melvin N	METRO MED	125
Abercrombie, Keith J	METRO MED	125
Abernathie, Dennis L	BOONE	026
Abinoja, Conrado B	ST. LOUIS METROP.	190
Abodeely, Daniel A	ST. LOUIS METROP.	190
Abrams, Bernard M	METRO MED	125
Abrams, Morris	ST. LOUIS METROP.	190
Abu Dalu, Ziad	ST. LOUIS METROP.	190
Accardo, Pasquale J	ST. LOUIS METROP.	190
Aceto, Thomas	ST. LOUIS METROP.	190
Ackerman, Lauren	ST. LOUIS METROP.	190
Acuff, Robert P	BUCHANAN	030
Adams, Allen G	ST. LOUIS METROP.	190
Adams, Mark A	SEMO	202
Adams, Riley R	CAPE GIRARDEAU	042
Adams, Robert B	JASPER	102
Adelman, Arthur	METRO MED	125
Adelman, Bruce T	METRO MED	125
Adelmann, Eugene	ST. LOUIS METROP.	190
Adler, Benard C	ST. LOUIS METROP.	190
Adler, Federico	METRO MED	125
Aeder, Mark I	METRO MED	125
Aff-Drum, Helen	ST. LOUIS METROP.	190
Afuwape, Emanuel A	ST. LOUIS METROP.	190
Agasino, Gaudencio L	F-G-W	074
Agee, L. Glenn	METRO MED	125
Aguinaldo, Jaime A	ST. LOUIS METROP.	190
Ahad, Khandaker A	C-M-M-R	046
Ahadi, Abd U	ST. LOUIS METROP.	190
Ahern, Archibald M	ST. LOUIS METROP.	190
Ahlering, George H	ST. LOUIS METROP.	190
Ahlering, George P	ST. LOUIS METROP.	190
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Ahlvin, Robt C	SEMO	202
Ahmad, Aqeeb	ST. LOUIS METROP.	190
Ahmad, Bashir	ST. LOUIS METROP.	190
Ahmad, Naseer	ST. LOUIS METROP.	190
Ahmad, Nusrat J	ST. LOUIS METROP.	190
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Ahmed, Iftekhar	METRO MED	125
Ahuja, Suraj P	METRO MED	125
Ailor, Edgar I	BOONE	026
Aitken, Louis F	ST. LOUIS METROP.	190
Ajans, Zaki A	AUDRAIN	014
Akbarnia, Behrooz A	ST. LOUIS METROP.	190
Aker, Umit T	ST. LOUIS METROP.	190
Akin, C. David	METRO MED	125
Al-Aly, Robert M	ST. LOUIS METROP.	190
Al-Shathir, Saad	JASPER	102
Albani, Frank J	CLAY-PLATTE	050
Albani, Lawrence A	CLAY-PLATTE	050
Albanna, Faisal J	ST. LOUIS METROP.	190
Albano, Benj I	JEFFERSON	106
Albera, Victor H	ST. LOUIS METROP.	190
Alberg, Marvin R	METRO MED	125
Albert, I. Renee	ST. LOUIS METROP.	190
Albright, Patti W	METRO MED	125
Albritton, Michael A	GREENE	082
Albus, Thomas E	ST. LOUIS METROP.	190
Alcancia, Elpidio Y	GREENE	082
***Alden, John E**	D-H-P-D	066
Alderman, Donald P	METRO MED	125
Alderson, Thomas W	BUCHANAN	030
Aldridge, George A	B-W-R-C	034
Alegre, Jorge M	ST. LOUIS METROP.	190
Aleksander, Bernardo G	ST. LOUIS METROP.	190
Alex, Morris	ST. LOUIS METROP.	190
Alexander, George K	ST. LOUIS METROP.	190
Alfie, Salomon	METRO MED	125
Ali, Mohammed E	METRO MED	125
Ali, Syed S	ST. LOUIS METROP.	190
Allain, James J	CLAY-PLATTE	050
Allan, James E	COLE	058
Allan, James R	CLAY-PLATTE	050
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Allen, Arthur A	METRO MED	125
Allen, Brent T	ST. LOUIS METROP.	190
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Allen, James H	ST. LOUIS METROP.	190
Allen, Jerry H	GREENE	082
Allen, Jerry H	F-G-W	074
Allen, Louis A	CLAY-PLATTE	050
Allen, Mark J	METRO MED	125
Allen, Melvin A	ST. LOUIS METROP.	190
Allen, Robert W	BOONE	026
Allen, Robt E	METRO MED	125
Allen, Thomas P	METRO MED	125
Allen, Willard M	ST. LOUIS METROP.	190
Allen, William Corwin	BOONE	026
Allen, Wm C	BOONE	026
Allison, James B	GREENE	082
Allphin, Barbara J	METRO MED	125
Almiron, Osias A	ST. LOUIS METROP.	190
Almuttar, Wasif F	NORTHWEST	158
Alon, Uri	METRO MED	125
Alonso, J. Mario	ST. LOUIS METROP.	190
Alonso-Yague, Pascual	ST. LOUIS METROP.	190
Alpert, Martin A	BOONE	026
Alsop, Webb S	METRO MED	125
Altepeter, H. Martin	ST. LOUIS METROP.	190
Altomare, Edward P	METRO MED	125
Alul, Mohammad Ali H	ST CHARLES-LINCOLN	189
Alvarez, Ulises C	ST. LOUIS METROP.	190
Alyea, James O	BOONE	026
Amato, Maryellen	ST. LOUIS METROP.	190
Ames, Mary B	METRO MED	125
Ames, William H	BUCHANAN	030
Amin, Navin J	ST. LOUIS METROP.	190
Amini, Jafar	METRO MED	125
Amjad, Mohammad T	ST. LOUIS METROP.	190
Ammatelli, Francis J	METRO MED	125
Amoury, Raymond A	METRO MED	125
Amromin, George D	BOONE	026
Ancheta, Apolinario A	GREENE	082
Andersen, David A	ST. LOUIS METROP.	190
Anderson, Charles B	ST. LOUIS METROP.	190
Anderson, Dixie J	ST. LOUIS METROP.	190
Anderson, Douglas A	GREENE	082
Anderson, Frank K	ST CHARLES-LINCOLN	189
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Anderson, John V	METRO MED	125
Anderson, Lynn A	GREENE	082
Anderson, Paul B	OZARKS	166
Anderson, Philip C	BOONE	026
Anderson, Raymond B	METRO MED	125
Anderson, Sue K	METRO MED	125
Anderson, Thos R	BOONE	026
Andes, Elizabeth A	METRO MED	125
Andres, Edward H	BUCHANAN	030
Andrews, Elizabeth J	GREENE	082
Andrews, Paul E	GREENE	082
Andrus, Bailey C	METRO MED	125
Andrus, Charles H	ST. LOUIS METROP.	190
Angelos, Brad J	SEMO	202
Anglen, Jeffrey O	METRO MED	125
Anglo, Luis B	ST. LOUIS METROP.	190
Ansbacher, Linda E	BOONE	026
Anslinger, David L	ST. LOUIS METROP.	190
Anstey, Geo C	ST. LOUIS METROP.	190
Anstey, John T	ST. LOUIS METROP.	190
Anthony, Dallas D	GREENE	082

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*Doctor of osteopathy.

Anthony, James P	METRO MED	125
Anthony, Lyndon U	ST. LOUIS METROP.	190
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Brown, Marden L	METRO MED	125
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Frenz, Exec. Sec., Mrs. Lois	Exectutive Secys.	001
Frewin, Paul R	GREENE	082
Fried, John S	METRO MED	125
Friedman, Michael J	METRO MED	125
Friedman, Morris L	METRO MED	125
Friedman, Paul L	ST. LOUIS METROP.	190
Friedman, Robt H	ST. LOUIS METROP.	190
Friedman, William H	ST. LOUIS METROP.	190
Fries, John W	ST. LOUIS METROP.	190
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Fritzlen, Thos J	METRO MED	125
Froehlich, Thomas W	GREENE	082
Frogge, Jim D	JASPER	102
Frumson, Guy H	ST. LOUIS METROP.	190
Fry, Robert D	ST. LOUIS METROP.	190
Fuchs, Geo J	BOONE	026
Fuhrman, Donald L	METRO MED	125
Fuleihan, Farid M	ST. LOUIS METROP.	190
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Fuller, Terry A	ST. LOUIS METROP.	190
Funsch, Robert E	ST. LOUIS METROP.	190
Furla, August J	ST. LOUIS METROP.	190
Furlong, Lawrence D	METRO MED	125

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Gado, Mokhtar H	ST. LOUIS METROP.	190
Gaffney, Jon W	BUCHANAN	030
Gafford, Franklin H	ST. LOUIS METROP.	190
Gagliardo, Joseph	ST. LOUIS METROP.	190
Gaines, Robert W	BOONE	026
Gainor, Barry J	BOONE	026
Gaitonde, Mangesh R	BOONE	026
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Galblum, Larry I	METRO MED	125
Galbreath, Ashford M	METRO MED	125

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Gambill, Gary L	MSMA	002
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Garriga, Francisco J	ST. LOUIS METROP.	190
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Garrison, Roy F	METRO MED	125
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***Gayle, Richard E**	B-W-R-C	034
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Gerecht, Wolfe B	GREENE	082
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German, Walter A	GREENE	082
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Gibbons, Robert T	METRO MED	125
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Graham, Wallace H	METRO MED	125
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Griffin, Olin A	D-H-P-D	066
Griffin, Wm T	BOONE	026
Griffith, S Kent	CAPE GIRARDEAU	042
Grim, Edward M	JASPER	102
Grimes, Elwyn M	METRO MED	125
Grimes, Manning E	BUCHANAN	030
Grisham, Thomas D	F-G-W	074
Groce, Geo D	CALLAWAY	038
Groshong, Ted D	BOONE	026
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Gruenebaum, Michael I	METRO MED	125
Grundmann, Wm H	ST. LOUIS METROP.	190
Grunt, Jerome A	METRO MED	125
Guastello, Joseph R	METRO MED	125
Guastello, Mario J	METRO MED	125
*Guenthner, Brenda L	BOONE	026
Guerra, Gaston G	METRO MED	125
Guhleman, Henry V	COLE	058
Gujarati, Subhash B	B-W-R-C	034
Gulick, C. Richard	ST. LOUIS METROP.	190
Gumerlock, Mary K	BOONE	026
Gundle, Sigmund	METRO MED	125
Gunn, Jack	LAKE OF THE OZARKS	120
Gunn, Richard W	METRO MED	125
Gunn, Victoria	COLE	058
Gunn, Walter T	ST. LOUIS METROP.	190
Gunnoe, Robert E	METRO MED	125
Gunter, Joe S	BUCHANAN	030
Gupta, Mala R	METRO MED	125
Gupta, Nilakshi	BOONE	026
Gura, George M	METRO MED	125
Gurba, Carol L	METRO MED	125
Gurba, Danny M	METRO MED	125
Gurian, Lawrence E	GREENE	082
Gursahani, Mohan	ST. LOUIS METROP.	190
Gurucharri, Vincent P	BOONE	026
Gustafson, Jon E	METRO MED	125
Gutek, E. Philip	METRO MED	125
Gutierrez, Anthony C	METRO MED	125
Gutierrez-Medina, Ernesto	ST. LOUIS METROP.	190
Gutknecht, Richard	METRO MED	125
Gutwein, Michael B	ST. LOUIS METROP.	190
Guy, Cynthia S	ST. LOUIS METROP.	190
Guyer, Emily	BOONE	026
Guyol, William B	ST. LOUIS METROP.	190
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Gwin, Edward	GREENE	082

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H'Doubler, Charles	GREENE	082
H'Doubler, Francis T	GREENE	082
H'Doubler, Peter B	GREENE	082
Ha, Richard J	NORTHEAST	150
Haas, Harry D	METRO MED	125
Haas, Robert W	CLAY-PLATTE	050
Habermann, James H	JASPER	102
Habert, Edward R	ST. LOUIS METROP.	190
Habib, Henry N	METRO MED	125
Habiger, Thomas G	GREENE	082
Hacker, Douglas A	GREENE	082
Hackett, Earl R	GREENE	082
Haddock, James N	ST. LOUIS METROP.	190
Haddow, Alastair D	GREENE	082
Hagan, John C	CLAY-PLATTE	050
Hagemann, Margarethe H	ST. LOUIS METROP.	190
Hagemann, Paul O	ST. LOUIS METROP.	190
Hagen, Douglas W	METRO MED	125
Hagen, Duane Q	ST. LOUIS METROP.	190
Hagen, Garrett A	ST. LOUIS METROP.	190
Hahn, Bruce H	METRO MED	125
Hahn, Frederick W	METRO MED	125
Hahn, Yoram	ST. LOUIS METROP.	190
Haight, J. Max	METRO MED	125
Haith, Walter F	METRO MED	125
Hale, Thomas H	ST. LOUIS METROP.	190
Halford, Richard	ST. LOUIS METROP.	190
Hall, David W	GREENE	082
Hall, David G	BOONE	026
Hall, Durward G	GREENE	082
*Hall, Frederick K	METRO MED	125
*Hall, John P	CAPE GIRARDEAU	042
Hall, John C	METRO MED	125
Hall, Robt T	METRO MED	125
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Hanson, E J	METRO MED	125
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***Hanson, Lesley A**	ST. LOUIS METROP.	190
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Hecker, Jos E	B-W-R-C	034
Hedge, S. Roy	METRO MED	125
Hedges, Richard C	CLAY-PLATTE	050
Heeb, Max A	SEMO	202
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Heimburger, Elizabeth M	BOONE	026
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Henry, Lawrence D	COLE	058
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Kline, Edmund W	BUCHANAN	030
Klingner, Geo M	GREENE	082
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Knabb, Kenneth E	GREENE	082
Knapp, Jane F	METRO MED	125
Knepper, Paul A	BUCHANAN	030
Knight, James W	ST. LOUIS METROP.	190
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Knight, Wm A	ST. LOUIS METROP.	190
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Knowles, R. Raymond	ST. LOUIS METROP.	190
Knowlton, Norman P	GREENE	082
Knudson, Dennis R	BOONE	026
Kobbermann, Kobby J	GREENE	082
Kobbermann, Thomas W	CLAY-PLATTE	050
Kodner, Ira J	ST. LOUIS METROP.	190
Koehler, Geo A	ST. LOUIS METROP.	190
Koenig, Marvin I	ST. LOUIS METROP.	190
Koerner, Kenneth A	ST. LOUIS METROP.	190
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Koivunen, Debra G	BOONE	026
Kolker, Allan E	ST. LOUIS METROP.	190
Kolze, Vernon W	GREENE	082
Koon, Benny H	D-H-P-D	066
Koontz, Paul G	METRO MED	125
Kopen, Dan F	ST. LOUIS METROP.	190
Kopp, Kenneth R	METRO MED	125
Kopp, Shelby K	ST. LOUIS METROP.	190
Koppers, Lawrence E	METRO MED	125
Korenblat, Phillip E	ST. LOUIS METROP.	190
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Kouchoukos, Nicholas T	ST. LOUIS METROP.	190
Kouo, Louis	CAPE GIRARDEAU	042
Koury, William C	METRO MED	125
Kovac, S. Robert	ST. LOUIS METROP.	190
Kowert, Edward H	ST. LOUIS METROP.	190
Kozminski, Mike	BUCHANAN	030
Kraeger, Russell R	ST. LOUIS METROP.	190
Kraemer, Bruce A	ST. LOUIS METROP.	190
Kraetsch, Robert E	ST. LOUIS METROP.	190
Kraft, Jacob	METRO MED	125
Krahn, Henry C	GREENE	082
Krain, Samuel	ST. LOUIS METROP.	190
Krajcovic, David P	ST. LOUIS METROP.	190
Kraner, Justin F	ST. LOUIS METROP.	190
Kranson, Seymour J	METRO MED	125
Krantman, Herbert J	ST. LOUIS METROP.	190
Kratz, Paul E	CAPE GIRARDEAU	042
Krautmann, John J	COLE	058
Kraybill, William G	ST. LOUIS METROP.	190
Krebs, Festus J	METRO MED	125
Krechel, Susan W	BOONE	026
Kreisman, Jerold J	ST. LOUIS METROP.	190
Kreski, Kenneth C	ST. LOUIS METROP.	190
Kretchmar, Alan P	ST. LOUIS METROP.	190
Krettek, John E	ST. LOUIS METROP.	190
Kreusser, Katherine L	ST. LOUIS METROP.	190
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Krishna, Padma	METRO MED	125
Kroeger, Geo B	ST. LOUIS METROP.	190
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Krug, Paul E	METRO MED	125
Krummenacher, Thomas K	ST. LOUIS METROP.	190
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Kryshak, Edward J	GREENE	082
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Kurtz, Karl J	METRO MED	125
Kuske, Robert R	MSMA	002
Kwoun, Soung	ST. LOUIS METROP.	190
Kyger, John E	METRO MED	125

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LaBach, James P	METRO MED	125
Labayen, Ricardo A	METRO MED	125
Labrie, Paul L	METRO MED	125
LacKamp, Robert J	BUCHANAN	030
Ladd, Charles B	ST. LOUIS METROP.	190
Ladenson, Roland P	BOONE	026
LaDriere, Raymond J	ST. LOUIS METROP.	190
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LaFoe, William K	CAPE GIRARDEAU	042
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Lally, James J	METRO MED	125
Lamb, Jerome P	METRO MED	125
Lamb, Wanda	ST. LOUIS METROP.	190
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Lamberti, Jos W	BOONE	026
Lamonda, Gary W	C-M-M-R	046
Lampert, Benjamin A	GREENE	082
Lamping, J. Daniels	ST. LOUIS METROP.	190
Lampros, William P	ST. LOUIS METROP.	190
Lampton, Lawrence M	BOONE	026
Lamy, John E	PETTIS	178
Landau, David W	ST. LOUIS METROP.	190
Landau, Wm M	ST. LOUIS METROP.	190
***Landers, Gary A**	CLAY-PLATTE	050
Landers, Burnell	METRO MED	125
Landhuis, Leo R	BOONE	026
Landis, Geo K	METRO MED	125
Landreneau, Rodney J	BOONE	026
Landrum, Alice L	BOONE	026
Landry, J. Hubert	ST. LOUIS METROP.	190
Landsbaum, Charles J	COLE	058
Landsman, Ira S	METRO MED	125
Landy, Richard	ST. LOUIS METROP.	190
Lane, Daniel K	ST. LOUIS METROP.	190
Lane, Charles A	NORTHEAST	150
Lang, John J	ST. LOUIS METROP.	190
Lange, David R	ST. LOUIS METROP.	190
Langley, Harriet S	METRO MED	125
Laningham, Susan L	BUCHANAN	030
Lankford, Harold D	AUDRAIN	014
Lansche, W. Edward	ST. LOUIS METROP.	190
Lapi, Angelo	METRO MED	125
Lappas, Demetrios G	ST. LOUIS METROP.	190
Laramore, Rosemary	BOONE	026
Larocca, Felix E. F.	ST. LOUIS METROP.	190
Larsen, Wm E	METRO MED	125
Larson, Paul U	ST. LOUIS METROP.	190
Latham, Raymond W	METRO MED	125
Latif, Azhar	LAFAYETTE-RAY	118
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Laughlin, Edward J	METRO MED	125
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Lawrence, Geo H	ST. LOUIS METROP.	190
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Lawton, John T	ST. LOUIS METROP.	190
Layle, John K	METRO MED	125
Layton, Ira C	METRO MED	125
Leary, Daniel J	ST. LOUIS METROP.	190
LeBlanc, Leo J	ST. LOUIS METROP.	190
Lederer, Charles M	METRO MED	125
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Lednicky, Jay A	METRO MED	125
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Lee, Fransiska A	ST. LOUIS METROP.	190
Lee, Gerald B	WEST CENTRAL	214
Lee, H. T.	BOONE	026
Lee, Henry A	METRO MED	125
Lee, Joseph King Tak	ST. LOUIS METROP.	190
Lee, Jung H	JEFFERSON	106
Lee, King Y	METRO MED	125
Lee, Leander K	ST. LOUIS METROP.	190
Lee, Tae H	METRO MED	125
Lee, Wilfred	CAPE GIRARDEAU	042
Lee, Charles K	METRO MED	125
Leech, Maurice P	BOONE	026
Leeper, Sidlee W	BOONE	026
Leeper, Claude K	BOONE	026
Leese, Philip T	METRO MED	125
LeFevre, Philip J	GREENE	082
Legarda, Maria M	METRO MED	125
Legler, Larry E	METRO MED	125
Lehman, Robert B	ST. LOUIS METROP.	190
Leibsohn, Joel M	METRO MED	125
Leidenfrost, Ronald D	ST. LOUIS METROP.	190
Leifer, Gary	METRO MED	125
Leifer, William W	METRO MED	125
Leightner, William F	ST. LOUIS METROP.	190
Leitch, Steven M	GREENE	082
Leming, Bert H	ST. LOUIS METROP.	190
Lenobel, Milton I	ST. LOUIS METROP.	190
Lents, Rickey L	CAPE GIRARDEAU	042
Lentz, Harold C	METRO MED	125
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Leonhardt, Erwin M	ST. LOUIS METROP.	190
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Lerner, Bruce	METRO MED	125
Lerner, Scott A	METRO MED	125
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Lerwick, Everett R	ST. LOUIS METROP.	190
Leslie, Stephen A	CLAY-PLATTE	050
Leslie, James T	COLE	058
Letizia, Wayne L	METRO MED	125
Levanvo, William	JASPER	102
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Levitt, Robert G	ST. LOUIS METROP.	190
Levy, Morton A	ST. LOUIS METROP.	190
Levy, Jerome F	ST. LOUIS METROP.	190
Lewin, W. Howard	ST. LOUIS METROP.	190
Lewis, J. Eugene	ST. LOUIS METROP.	190
Lewis, Lawrence M	ST. LOUIS METROP.	190
Lewis, Revis C	METRO MED	125
Lewis, Robert D	ST. LOUIS METROP.	190
Lewis, Noel R	GREENE	082
Lewis, Frank H	METRO MED	125
Liang, Jing C	METRO MED	125
Liao, Kun T	ST. LOUIS METROP.	190
Lichtor, Jos M	METRO MED	125
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Lickenbrock, Karen A	ST. LOUIS METROP.	190
Lieb, Francis X	ST. LOUIS METROP.	190
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Liliedahl, Roger L	METRO MED	125
***Lillig, James F**	CLAY-PLATTE	050
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Littlejohn, Robert T	CLAY-PLATTE	050
Litton, Lyle D	GREENE	082
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Litwiller, Raymond W	BOONE	026
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Livingston, Don G	ST. LOUIS METROP.	190
Llana, Angelo A	BUCHANAN	030
Llorens, Alfred S	BOONE	026
Lockard, Orlyn O	BUCHANAN	030
Lockhart, Charles E	GREENE	082
Lockwood, Gary F	METRO MED	125
Lockwood, Ted E	METRO MED	125
Loeb, Richard H	GREENE	082
Loeb, Virgil	ST. LOUIS METROP.	190
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Logue, John T	BOONE	026
Lohmar, Roland E	BOONE	026
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Loitman, Bernard S	ST. LOUIS METROP.	190
Lombardo, Joseph A	ST. LOUIS METROP.	190
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Londe, Alan M	ST. LOUIS METROP.	190
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Long, Priscilla E	NORTHEAST	150
Long, R. Stacy	METRO MED	125
Long, Stephen E	GREENE	082
Long, Timothy P	F-G-W	074
Lonsway, Maurice J	ST. LOUIS METROP.	190
Lopez, Marvin J	ST. LOUIS METROP.	190
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Lopez-Plata, Roberto	METRO MED	125
LoPiccolo, Vincent J	ST. LOUIS METROP.	190
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Loren, Michael L	METRO MED	125
Lorenc, Ernest	GREENE	082
Lorenzo, Edilberto B	METRO MED	125
Loth, Timothy S	ST. LOUIS METROP.	190
Lottes, J. Otto	ST. LOUIS METROP.	190
Loughead, John R	B-W-R-C	034

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Loutzenhiser, James K	125	METRO MED
***Loveland, Richard D**	208	TRI-LAKES
Lovinger, Warren C	214	WEST CENTRAL
Lovinggood, Thos A	042	CAPE GIRARDEAU
Lowe, Alvin L	178	PETTIS
Lowe, H. Arch	082	GREENE
Loyd, Earl L	058	COLE
Loynd, Robt C	190	ST. LOUIS METROP.
Lozoff, Richard D	125	METRO MED
Lubowitz, Herbert	190	ST. LOUIS METROP.
Lucas, Luke W	026	BOONE
Lucas, Thomas G	190	ST. LOUIS METROP.
Luckenbill, Paul T	054	CLINTON
Ludwig, Lee V	214	WEST CENTRAL
Ludwig, Mark A	190	ST. LOUIS METROP.
Ludwig, William D	082	GREENE
Ludwikosky, Mikel A	125	METRO MED
Luechtefeld, Frank	190	ST. LOUIS METROP.
Lueckenhoff, Rebecca R	058	COLE
Luerding, Jeffrey A	050	CLAY-PLATTE
Luetje, Charles M	125	METRO MED
Lugo, Saml	190	ST. LOUIS METROP.
Luh, Andrew M	190	ST. LOUIS METROP.
Lund, Herluf G	190	ST. LOUIS METROP.
Lund, Robert H	190	ST. LOUIS METROP.
Lundman, Hugh	082	GREENE
Lurie, Harold H	082	GREENE
Lusk, Chas A	214	WEST CENTRAL
Luther, George A	190	ST. LOUIS METROP.
Lutkewitte, Jos F	174	PERRY-STE GENEVIEVE
Luzecky, Michael H	082	GREENE
Lyddon, Harold R	125	METRO MED
Lyle, Robt R	120	LAKE OF THE OZARKS
Lyman, Edward H	190	ST. LOUIS METROP.
Lynch, Gerald C	125	METRO MED
Lynch, Thos W	082	GREENE
Lyons, Daniel F	082	GREENE
Lyskowski, John C	058	COLE
Lyskowski, Maria M	042	CAPE GIRARDEAU
Lyss, Carl A	190	ST. LOUIS METROP.
Lyss, Stanley B	190	ST. LOUIS METROP.
Lytle, Edwin L	190	ST. LOUIS METROP.
Lytle, Michael F	125	METRO MED

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Maben, Sam E	125	METRO MED
MacDonald, Robin R	125	METRO MED
MacDonald, Robt R	190	ST. LOUIS METROP.
MacDonald, Wm C	190	ST. LOUIS METROP.
Macdonnell, Thos M	210	WEBSTER
MacGee, Edwin E	125	METRO MED
Machefsky, Sidney D	190	ST. LOUIS METROP.
Machek, Otakar	190	ST. LOUIS METROP.
MacInnis, Florence E	125	METRO MED
Mackey, Richard L	190	ST. LOUIS METROP.
Maclaughlin, James C	102	JASPER
Macleod, Angus	190	ST. LOUIS METROP.
MacNaughton, Robert A	050	CLAY-PLATTE
MacNaughton, Ralph E	125	METRO MED
MacNaughton, Robert A	125	METRO MED
Macnish, James M	190	ST. LOUIS METROP.
Maddipati, Sreedezi	190	ST. LOUIS METROP.
Madduri, Aruna D	034	B-W-R-C
Madduri, Sivaprasad D	034	B-W-R-C
Madrid, Dominador O	190	ST. LOUIS METROP.
Magaw, David C	066	D-H-P-D
Magee, Robt L	214	WEST CENTRAL
Magee, W. Edwin	190	ST. LOUIS METROP.
***Magill, William S**	082	GREENE
Magruder, Lyell M	214	WEST CENTRAL
Mahboubi, Aziz O	202	SEMO
Mahe, Geo A	190	ST. LOUIS METROP.
Maher, Robt W	082	GREENE
Mahmoud, Said F	125	METRO MED
Mahnken, Robert F	102	JASPER
Mais, Thomas E	125	METRO MED
Maitz, Carlos A	190	ST. LOUIS METROP.
Major, Troy E	082	GREENE
Majors, Patrick F	190	ST. LOUIS METROP.
Majure-Lees, Joyce E	125	METRO MED
Majzoub, Hish S	102	JASPER
Makos, Mignon M	030	BUCHANAN
Malik, Sarfraz A	190	ST. LOUIS METROP.
Maliszewski, James A	125	METRO MED
Mallouk, Alexander G	125	METRO MED
Mallow, James E	125	METRO MED
Malmberg, Virgil L	190	ST. LOUIS METROP.
Maloney, Robert M	190	ST. LOUIS METROP.
Manansala, Antonio Q	190	ST. LOUIS METROP.
Mandler, George	078	GRAND RIVER
Mangalat, Narayanan K	102	JASPER
Mangum, William B	125	METRO MED
Mangunta, Vijaya K	042	CAPE GIRARDEAU
Manion, Thos S	125	METRO MED
Manire, John E	102	JASPER
Mann, James K	150	NORTHEAST
Mann, Kenneth R	050	CLAY-PLATTE
Mannis, Charles I	190	ST. LOUIS METROP.
Manske, Paul R	190	ST. LOUIS METROP.
Mantell, Jack M	082	GREENE
Mantovani, John F	190	ST. LOUIS METROP.
Manuel, Louis C	125	METRO MED
Maple, Francis M	082	GREENE
Maranan, Diosdado L	106	JEFFERSON
Maravilla, Levy M	190	ST. LOUIS METROP.
Marbarger, John P	190	ST. LOUIS METROP.
Marchiando, Albert W	074	F-G-W
Marchosky, J. Alex	190	ST. LOUIS METROP.
Marcus, Morris D	190	ST. LOUIS METROP.
Mardini, Edward E	138	MINERAL AREA
Maret, Christopher R	190	ST. LOUIS METROP.
Margolis, David M	190	ST. LOUIS METROP.
Margolis, Robert P	190	ST. LOUIS METROP.
Marietta, William G	042	CAPE GIRARDEAU
Marklin, Gary F	190	ST. LOUIS METROP.
Markway, Gregory A	125	METRO MED
Marr, Garrett L	125	METRO MED
Marre, Joyce E	190	ST. LOUIS METROP.
Marrs, David B	189	ST CHARLES-LINCOLN
Marsan, Richard E	026	BOONE
Marsh, Alice	125	METRO MED
Marsh, Jeffrey L	190	ST. LOUIS METROP.
Marshall, Hal E	125	METRO MED
Marshall, Jay P	190	ST. LOUIS METROP.
Marshall, William G	026	BOONE
Marshall, William H	058	COLE
Marston, F. James	030	BUCHANAN
Marti, Larry B	135	MID-MISSOURI
Martin, Chris J	026	BOONE
Martin, Clarence A	102	JASPER
Martin, Daniel J	190	ST. LOUIS METROP.
Martin, David S	190	ST. LOUIS METROP.
Martin, Jeffrey W	190	ST. LOUIS METROP.
Martin, John N	030	BUCHANAN
Martin, Mark W	125	METRO MED
Martin, Richard W	026	BOONE
Martin, Richard A	042	CAPE GIRARDEAU
Martin, Scott A	190	ST. LOUIS METROP.
Martin, Wendell J	186	PIKE
Marty, David R	058	COLE
Martz, John C	190	ST. LOUIS METROP.
Maslan, Mark J	125	METRO MED
Mass, Joan H	190	ST. LOUIS METROP.
Massarat, Parviz	202	SEMO
Masters, Edwin J	042	CAPE GIRARDEAU
Masters, Wm H	190	ST. LOUIS METROP.
Mathew, Ruby	190	ST. LOUIS METROP.
Matias, Delia A	026	BOONE
Matile, Gerald U	125	METRO MED
Matovich, Violet B	125	METRO MED
Matson, Jeffrey A	125	METRO MED
Mattax, James B	082	GREENE
Matthews, John I	058	COLE
Matthews, John G	190	ST. LOUIS METROP.
Matthews, Richard H	135	MID-MISSOURI
Matthews, Thomas D	074	F-G-W
Maughs, Sydney B	190	ST. LOUIS METROP.
Mauldin, Charles C	082	GREENE
Maulik, Dev	125	METRO MED
Maupin, Kathy C	190	ST. LOUIS METROP.
Maves, Michael D	190	ST. LOUIS METROP.
Maxson, Katherine A	190	ST. LOUIS METROP.
Maxson, Theodore R	110	JOHNSON
Maxwell, Sarz	030	BUCHANAN
May, Albert L	034	B-W-R-C
Mayer, John H	125	METRO MED
Mayer, Robt A	190	ST. LOUIS METROP.
Mayes, Ben R	190	ST. LOUIS METROP.
Maylack, Fallon H	190	ST. LOUIS METROP.

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Maynard, Colleen M	METRO MED	125
Mayuga, Edgardo G	ST. LOUIS METROP.	190
Mayuga, Laureano G	SOUTH CENTRAL	206
Mayus, Joseph L	GREENE	082
McAdam, C. Rush	ST. LOUIS METROP.	190
McAfee, Gordon	GREENE	082
McAlhany, Howard J	GREENE	082
McAlister, William H	ST. LOUIS METROP.	190
McBride, Lawrence R	ST. LOUIS METROP.	190
McCabe, Eugene J	ST CHARLES-LINCOLN	189
McCadden, Michael E	ST. LOUIS METROP.	190
McCaffree, Mary K	COLE	058
McCall, Edwin L	ST. LOUIS METROP.	190
McCalla, John P	CLAY-PLATTE	050
McCallister, Ben D	METRO MED	125
McCanse, Andrew	METRO MED	125
McCanse, Lynn R	CLAY-PLATTE	050
McCarthy, Christopher	ST. LOUIS METROP.	190
McClennan, Bruce L	ST. LOUIS METROP.	190
McCluggage, Newton C	CLAY-PLATTE	050
McCollister, David L	ST CHARLES-LINCOLN	189
McConahay, David R	METRO MED	125
McConchie, James E	METRO MED	125
McCool, James F	ST. LOUIS METROP.	190
McCorcle, Marcus D	GREENE	082
McCord, E. Scott	BOONE	026
McCormack, Robert E	METRO MED	125
McCormick, Francis P	METRO MED	125
McCormick, James E	CLAY-PLATTE	050
McCown, Allan H	ST. LOUIS METROP.	190
McCoy, Frederick J	METRO MED	125
McCoy, Warren R	PEMISCOT	170
McCray, Glen M	GREENE	082
McCray, Stephen A	CLAY-PLATTE	050
McCroskey, Lon C	METRO MED	125
McCullough, Nancy J	MID-MISSOURI	135
McDaniel, John R	BUCHANAN	030
McDavid, Robert E	BOONE	026
McDermott, Alfred E	PERRY-STE GENEVIEVE	174
McDonald, Eugene F	CAPE GIRARDEAU	042
McDonald, Herbert L	METRO MED	125
McDonald, Margaret E	JASPER	102
McDonald, Michael G	JASPER	102
McDonald, Wallace	BUCHANAN	030
McDonald, Wilbur P	BUCHANAN	030
McDonnell, John F	METRO MED	125
McElroy, Glenn L	BOONE	026
McFadden, Gene A	LAFAYETTE-RAY	118
McFarland, H. R.	METRO MED	125
McFarland, Rodney J	OZARKS	166
McGath, Rickey L	B-W-R-C	034
McGinnis, Wm F	ST. LOUIS METROP.	190
McGinty, Chas P	CAPE GIRARDEAU	042
McGinty, Frank H	CAPE GIRARDEAU	042
McGonigle, James P	JASPER	102
McGonigle, Michael M	JASPER	102
McGovney, Janice K	CLAY-PLATTE	050
McGuire, Thomas H	METRO MED	125
McGurk, Thomas E	METRO MED	125
McHardy, Bryson R	NORTHEAST	150
McIntire, Timothy L	COLE	058
McIntosh, Donald E	METRO MED	125
McIntosh, Douglas A	CAPE GIRARDEAU	042
McIntosh, Michele C	METRO MED	125
McIntyre, John D	METRO MED	125
McKee, Wallace P	METRO MED	125
McKeel, Thos B	METRO MED	125
McKinley, Lois J	METRO MED	125
McKinney, Daniel C	GREENE	082
McKinney, Joe K	ST. LOUIS METROP.	190
McKinney, John W	ST. LOUIS METROP.	190
McKinney, William D	MINERAL AREA	138
McKinsey, David S	METRO MED	125
McKnelly, Wm V	METRO MED	125
McKnight, Scott J	CLAY-PLATTE	050
McLaren, David L	BOONE	026
***McLaughlin, Dan A**	BUCHANAN	030
McLaughlin, Durnell	METRO MED	125
McLaughlin, Richard D	GREENE	082
McLemore, Willie O	METRO MED	125
McLeod, Alan J	METRO MED	125
McMeekin, Sheila P	METRO MED	125
McMillan, David L	OZARKS	166
McMillen, James J	BUCHANAN	030
McMullin, Forbes A	ST. LOUIS METROP.	190
McMurray, Earlene H	METRO MED	125
McMurray, Scott W	GREENE	082
McMurray, Timothy I	METRO MED	125
McNalley, Michael	ST. LOUIS METROP.	190
McNamara, Gerald R	CLAY-PLATTE	050
McNamara, John J	ST. LOUIS METROP.	190
McNeal, Douglas M	GREENE	082
McNitt, Jay D	METRO MED	125
McPhee, Mark S	METRO MED	125
McPhee, Wm R	CLAY-PLATTE	050
McQueary, Frederick G	GREENE	082
McVey, Pamela S	METRO MED	125
McWherter, Lottie B	METRO MED	125
Meador, James R	ST. LOUIS METROP.	190
Meadows, C. Douglas	ST. LOUIS METROP.	190
***Mears, Gregory H**	BUCHANAN	030
Mechlin, David C	BOONE	026
Medler, John F	ST. LOUIS METROP.	190
Medler, P. Louis	ST. LOUIS METROP.	190
Medlicott, William J	METRO MED	125
Meegan, Robt J	METRO MED	125
Megibow, Alan D	BUCHANAN	030
Mehaffy, Orville A	JASPER	102
Mehan, Donald J	ST. LOUIS METROP.	190
Mehlhorn, Gary L	GREENE	082
Mehra, Ravi	ST. LOUIS METROP.	190
Mehra, Usha	ST. LOUIS METROP.	190
Meier, Francis X	COLE	058
Meiklejohn, Duncan C	METRO MED	125
Meinberg, William H	ST. LOUIS METROP.	190
Meiners, David J	ST. LOUIS METROP.	190
Meiners, Paul N	ST. LOUIS METROP.	190
Meiners, Theodore M	ST. LOUIS METROP.	190
Meldi, Dominic M	GREENE	082
Melgaard, Sven R	METRO MED	125
Melia, B J	METRO MED	125
Mell, Roger L	ST. LOUIS METROP.	190
***Mellies, Steven D**	CAPE GIRARDEAU	042
Melson, G. Leland	ST. LOUIS METROP.	190
Meltz, Gary J	ST CHARLES-LINCOLN	189
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Menchetti, Donald E	GREENE	082
Mendelsohn, George E	ST. LOUIS METROP.	190
Mendelsohn, Robert S	ST. LOUIS METROP.	190
Mendelson, David F	ST. LOUIS METROP.	190
Mendez, Maria A	GREENE	082
Mendonsa, Lawrence E	ST. LOUIS METROP.	190
Menendez, Silvana Y	ST CHARLES-LINCOLN	189
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Mentgen, Carl N	GREENE	082
Meredith, William R	JASPER	102
Merenda, Frank J	ST. LOUIS METROP.	190
Merenda, James T	ST. LOUIS METROP.	190
Merenda, Sam J	ST. LOUIS METROP.	190
Merrims, Theodore	ST. LOUIS METROP.	190
Merritt, Burch A	ST. LOUIS METROP.	190
Mertz, Janet S	METRO MED	125
Mestad, Peter H	METRO MED	125
Mestres, Hugh M	ST. LOUIS METROP.	190
Metzler, Michael H	BOONE	026
Meyer, Harry E	ST. LOUIS METROP.	190
Meyer, Jay	ST. LOUIS METROP.	190
Meyer, Jerry L	LAFAYETTE-RAY	118
Meyer, John W	GREENE	082
Meyer, John S	ST. LOUIS METROP.	190
Meyer, Melvin E	ST. LOUIS METROP.	190
Meyer, Paul W	METRO MED	125
Meyer, Randall E	COLE	058
Meyer, Robert C	ST. LOUIS METROP.	190
Meyer, Wayne W	ST. LOUIS METROP.	190
Meyerrose, Gary E	ST. LOUIS METROP.	190
Meyers, Elsie F	ST. LOUIS METROP.	190
Meyers, Jerry R	ST CHARLES-LINCOLN	189
Meyers, John B	ST. LOUIS METROP.	190
Meyers, Robert W	ST. LOUIS METROP.	190
***Michael, Roy A**	COLE	058
Michael, Vernon E	ST. LOUIS METROP.	190
Michaelree, John F	ST. LOUIS METROP.	190
Michaels, Robert H	GREENE	082
Michelson, Richard B	METRO MED	125
Middleton, Jerry N	ST. LOUIS METROP.	190
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Middleton, Mary A	ST. LOUIS METROP.	190
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Milder, Barry D	190	ST. LOUIS METROP.
Milder, Benj	190	ST. LOUIS METROP.
Miles, Geo O	125	METRO MED
Miles, Paul W	190	ST. LOUIS METROP.
Miles, Wayne B	082	GREENE
Milgram, Byron A	125	METRO MED
Mill, Wm B	190	ST. LOUIS METROP.
Millangue, Consolacion	190	ST. LOUIS METROP.
Miller, Burney A	118	LAFAYETTE-RAY
Miller, Charles W	190	ST. LOUIS METROP.
Miller, Chas	190	ST. LOUIS METROP.
Miller, Donald	058	COLE
Miller, Edward J	190	ST. LOUIS METROP.
Miller, Gayle P	125	METRO MED
Miller, Geoffrey W	190	ST. LOUIS METROP.
Miller, Gerald L	125	METRO MED
Miller, Harry G	086	HENRY
Miller, James E	190	ST. LOUIS METROP.
Miller, John T	125	METRO MED
Miller, Jule P	190	ST. LOUIS METROP.
Miller, Leroy J	026	BOONE
Miller, Michael R	125	METRO MED
Miller, Robert N	190	ST. LOUIS METROP.
***Miller, Robin C**	190	ST. LOUIS METROP.
Miller, William D	030	BUCHANAN
Miller, William D	202	SEMO
Miller, Wilson H	125	METRO MED
Miller, Wm V	190	ST. LOUIS METROP.
Miller, Exec. Dir., Judy	001	Exectutive Secys.
Millet, Ruth E	125	METRO MED
Mills, Melissa J	002	MSMA
Millwee, Elizabeth M	026	BOONE
Milne, Jay L	082	GREENE
Milster, Clyde R	190	ST. LOUIS METROP.
Miltenberger, Paul C	070	DUNKLIN
Minana, Mitchell F	190	ST. LOUIS METROP.
Minkoff, I. Monica	189	ST CHARLES-LINCOLN
Minnigerode, Lana K	125	METRO MED
Minnigerode, Turner L	125	METRO MED
Mir, A. Rauf	125	METRO MED
Mirbaha, Mitchell M	190	ST. LOUIS METROP.
Mire, Louis E	082	GREENE
Mischnick, Carol R	190	ST. LOUIS METROP.
Mishkin, Marvin R	190	ST. LOUIS METROP.
Miskovsky, Emil F	190	ST. LOUIS METROP.
Missey, Wilburn C	190	ST. LOUIS METROP.
Mistry, Tehmton S	190	ST. LOUIS METROP.
Mitchell, Andrew D	125	METRO MED
Mitchell, Franklin L	026	BOONE
Mitchell, John D	125	METRO MED
Mitchell, Lynn D	026	BOONE
Mitchell, Mark A	125	METRO MED
Mitchell, Robt H	125	METRO MED
Mitchell, Thos J	074	F-G-W
Mitchem, Olevia	125	METRO MED
Mitra, Nirmal K	125	METRO MED
Mittleman, Frederick S	125	METRO MED
Mizell, Myron W	082	GREENE
Moeller, F. Delbert	189	ST CHARLES-LINCOLN
Moeller, Randall J	030	BUCHANAN
Mohapatra, Raj N	189	ST CHARLES-LINCOLN
Mohrman, Raymond F	190	ST. LOUIS METROP.
Mohs, Frank R	190	ST. LOUIS METROP.
Mohsen, Aly M	082	GREENE
Molberg, Peter J	082	GREENE
Molchan, James L	066	D-H-P-D
Molden, C. Scott	190	ST. LOUIS METROP.
Molden, Chas A	190	ST. LOUIS METROP.
Molina, Roy	026	BOONE
Mollman, H. Dennis	190	ST. LOUIS METROP.
Monafo, William W	190	ST. LOUIS METROP.
Monaghan, Greg G	026	BOONE
Mongan, James J	125	METRO MED
Monroe, C. Dean	026	BOONE
Monteleone, Patricia L	190	ST. LOUIS METROP.
Montellano, Arturo H	166	OZARKS
Montello, Samuel A	125	METRO MED
Monterubio, Fred R	190	ST. LOUIS METROP.
Montes, Arturo C	190	ST. LOUIS METROP.
Montes De Oca, Julio	190	ST. LOUIS METROP.
Montgomery, Austin F	190	ST. LOUIS METROP.
Montgomery, John H	102	JASPER
Montgomery, Michael A	125	METRO MED
Mook, David G	125	METRO MED
Moolsintong, Pornchai	190	ST. LOUIS METROP.
Mooney-Smith, Patricia	125	METRO MED
Moore, Candice A	214	WEST CENTRAL
Moore, David L	125	METRO MED
Moore, De Armond	082	GREENE
Moore, Harry G	190	ST. LOUIS METROP.
Moore, Jack D	125	METRO MED
Moore, Joan Prouty	125	METRO MED
Moore, John M	125	METRO MED
Moore, Michael R	206	SOUTH CENTRAL
Moore, Michael T	214	WEST CENTRAL
Moore, Richard E	042	CAPE GIRARDEAU
Moore, Thomas B	102	JASPER
Moore, Walter L	190	ST. LOUIS METROP.
Mora, Alvaro	190	ST. LOUIS METROP.
Moran, Christopher J	190	ST. LOUIS METROP.
Moran, Thos M	190	ST. LOUIS METROP.
Morantz, Robert A	125	METRO MED
Moranville, Benedict A	030	BUCHANAN
Moranz, John W	034	B-W-R-C
Morehead, Wm E	070	DUNKLIN
Morehouse, Paul D	074	F-G-W
Morey, Kirk P	190	ST. LOUIS METROP.
Morgan, Charles H	082	GREENE
Morgan, David B	125	METRO MED
Morgan, Dix R	042	CAPE GIRARDEAU
Morgan, Harry C	190	ST. LOUIS METROP.
Morgan, John L	082	GREENE
Morgan, Richard L	125	METRO MED
Morgan, Stephan S	190	ST. LOUIS METROP.
Morgan, W. Tom	026	BOONE
Morgan, Willy J C	190	ST. LOUIS METROP.
Moriconi, William J	190	ST. LOUIS METROP.
Moritz, Gerald	190	ST. LOUIS METROP.
Moritz, Karen L	190	ST. LOUIS METROP.
Morley, Mary A	190	ST. LOUIS METROP.
***Morley, Ronald F**	058	COLE
Morris, Alan H	190	ST. LOUIS METROP.
Morris, Barbara A	125	METRO MED
Morris, J H	125	METRO MED
Morris, John J	026	BOONE
Morris, R. William	190	ST. LOUIS METROP.
Morris, Terry V	125	METRO MED
Morrison, Arlen E	190	ST. LOUIS METROP.
Morrison, Donald H	125	METRO MED
Morrison, Richard A	125	METRO MED
Morrison, Robert R	125	METRO MED
Morrison, Stephen K	082	GREENE
Morrison, Thos A	166	OZARKS
Morrison, Tom V	208	TRI-LAKES
Morrow, N. Eugene	082	GREENE
Morse, John P	030	BUCHANAN
Mortensen, Frede	190	ST. LOUIS METROP.
Morton, David J	190	ST. LOUIS METROP.
Morton, Paul C	082	GREENE
Morton, Wayne L	214	WEST CENTRAL
Mosbacher, Hugh E	125	METRO MED
Mosby, Larry D	026	BOONE
Moseley, F. Thomas	082	GREENE
Moses, Robert A	190	ST. LOUIS METROP.
Mosley, Julian C	190	ST. LOUIS METROP.
Moss, Paul	125	METRO MED
Mossie, Raymond D	050	CLAY-PLATTE
Motchan, Dennis G	190	ST. LOUIS METROP.
Mothershead, John L	030	BUCHANAN
Motier, Thomas H	190	ST. LOUIS METROP.
Mowrey, Wm O	190	ST. LOUIS METROP.
Moya, Carlos E	030	BUCHANAN
Muchnick, Richard L	190	ST. LOUIS METROP.
Muckerman, Richard C	190	ST. LOUIS METROP.
Muckerman, Richard I	190	ST. LOUIS METROP.
Muegge, F. David	082	GREENE
Muelleman, Peter J	125	METRO MED
Mueller, Adolph R	102	JASPER
Mueller, Clarence E	190	ST. LOUIS METROP.
Mueller, Howard A	190	ST. LOUIS METROP.
Mueller, John J	190	ST. LOUIS METROP.
Mueller, Jos A	190	ST. LOUIS METROP.
Mueller, Mark R	166	OZARKS
Mueller, Martin J	125	METRO MED
Mueller, Morris A	190	ST. LOUIS METROP.
Mueller, Randall E	026	BOONE
Mueller, Wilbur K	190	ST. LOUIS METROP.
Muhammud, Faquir	190	ST. LOUIS METROP.
Muhm, Harvard Y	189	ST CHARLES-LINCOLN
Mujica, Patricio H	030	BUCHANAN

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Mukharji, Jhulan	METRO MED	125
Mulder, George D	BUCHANAN	030
Mullarky, Wilbur A	ST. LOUIS METROP.	190
Mullen, Jack	MINERAL AREA	138
Mullen, Mary E	AUDRAIN	014
Muller, Milton	METRO MED	125
Mullican, Charles N	BUCHANAN	030
Mullins, John E	ST. LOUIS METROP.	190
Muncy, Gary A	ST. LOUIS METROP.	190
Mundy, William L	METRO MED	125
Munger, Michael L	METRO MED	125
Munyan, Earl A	METRO MED	125
Muraywid, Ahmad H	AUDRAIN	014
Murdock, Nathaniel	ST. LOUIS METROP.	190
Murphy, Daniel J	ST. LOUIS METROP.	190
Murphy, Everett M	METRO MED	125
Murphy, J. Peter	ST. LOUIS METROP.	190
Murphy, James A	BUCHANAN	030
Murphy, John P	METRO MED	125
Murphy, Wm A	ST. LOUIS METROP.	190
Murray, Eric	COLE	058
Murrell, H. Jerry	BOONE	026
Muscato, Joseph J	BOONE	026
Muscato, Mary S	BOONE	026
Muschany, Norman K	ST. LOUIS METROP.	190
Mustoe, Thomas A	ST. LOUIS METROP.	190
Mutchnick, Norman	METRO MED	125
Muzaffaruddin, Mohammed	ST CHARLES-LINCOLN	189
Myears, Donald W	GREENE	082
Myers, Carl M	METRO MED	125
Myers, David W	CLAY-PLATTE	050
Myers, Duane E	JASPER	102
Myers, Gary H	ST. LOUIS METROP.	190
Myers, Geo H	METRO MED	125
Myers, Ivan T	ST. LOUIS METROP.	190
Myers, James M	MID-MISSOURI	135
Myers, John S	METRO MED	125
Myron, Mark C	METRO MED	125

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Nachtigal, Michael P	GREENE	082
Nagle, Michael G	JASPER	102
Nagy, Al L	B-W-R-C	034
Nahm, Chung C	ST. LOUIS METROP.	190
Naime, Mansour J	METRO MED	125
Nakra, Bharat Raj	ST. LOUIS METROP.	190
Nakra, Rashmi R	ST. LOUIS METROP.	190
Namnum, Peter A	METRO MED	125
Nanson, James D	BOONE	026
Narayan, Dilip L	ST. LOUIS METROP.	190
Narkiewicz, Lawrence S	ST. LOUIS METROP.	190
Naseer, Riaz A	ST. LOUIS METROP.	190
Nash, Helen E	ST. LOUIS METROP.	190
Nash, Homer E	ST. LOUIS METROP.	190
Naunheim, Keith S	ST. LOUIS METROP.	190
Navato, Jose R	METRO MED	125
Nayar, Gopal K	ST. LOUIS METROP.	190
Neal, James G	GREENE	082
Near, David M	ST. LOUIS METROP.	190
Neblett, Lewis M	GREENE	082
***Negrete, Abelardo**	CLAY-PLATTE	050
Neighbor, Ernest H	METRO MED	125
Neihart, Robert E	METRO MED	125
Nelson, Bentley A	METRO MED	125
Nelson, David E	GREENE	082
Nelson, Donald C	GREENE	082
Nelson, J. Roger	ST. LOUIS METROP.	190
Nelson, Paul W	METRO MED	125
Nelson, Richard E	METRO MED	125
Nelson, Susan J	ST. LOUIS METROP.	190
Nemec, Edward S	ST. LOUIS METROP.	190
Nepute, James A	ST. LOUIS METROP.	190
Nesselrode, John H	METRO MED	125
Neu, Leo T	GREENE	082
Neu, Leo T	GREENE	082
Neuman, Neal	ST. LOUIS METROP.	190
Newland-Pagan, Yvonne C	DUNKLIN	070
Newman, Mary J	OZARKS	166
Newman, Matthew	ST. LOUIS METROP.	190
Newman, Robert L	METRO MED	125
Newman, William R	JASPER	102
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Newport, Gerald	ST. LOUIS METROP.	190
Newton, Gordon	ST. LOUIS METROP.	190
Nguyen, Helen T	BUCHANAN	030
Nicholas, Stephen P	ST. LOUIS METROP.	190
Nicholis, G. Ronald	METRO MED	125
Nichols, David A	CALLAWAY	038
Nichols, W. Kirt	BOONE	026
Nickell, Margaret B	METRO MED	125
Nickell, Michael D	JASPER	102
Nicolai, Chas H	ST. LOUIS METROP.	190
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Nielsen, Carl H	ST. LOUIS METROP.	190
Nierling, Dean A	BOONE	026
Niesen, Anna R	ST. LOUIS METROP.	190
Niesen, Frank J	ST. LOUIS METROP.	190
Niesen, Thomas E	ST. LOUIS METROP.	190
Nieuwenhuizen, Maarten	BOONE	026
Nigh, Chas A	ST. LOUIS METROP.	190
Nigro, Thomas L	METRO MED	125
Nishi, Toshio	ST. LOUIS METROP.	190
Nix, J. Gustavo	D-H-P-D	066
Nixon, Edward E	GRAND RIVER	078
Noback, Richardson K	METRO MED	125
Nolan, Chas J	ST. LOUIS METROP.	190
Noller, Henry W	ST. LOUIS METROP.	190
Nolph, Georgia J	BOONE	026
Nolph, Karl D	BOONE	026
Noltensmeyer, Milton H	METRO MED	125
Nomura, Roy M	ST. LOUIS METROP.	190
Nordlicht, Scott M	ST. LOUIS METROP.	190
Norland, Chas C	ST. LOUIS METROP.	190
Nouhan, Joseph G	ST. LOUIS METROP.	190
Nourbakhsh, Mahmoud M	CLAY-PLATTE	050
Nouri, Hassan	ST. LOUIS METROP.	190
Novack, Mark A	ST. LOUIS METROP.	190
Nuetzel, John A	ST. LOUIS METROP.	190
Nulton, Carnie C	METRO MED	125
Nunez, Maria A	ST. LOUIS METROP.	190
Nussbaum, Larry	CLAY-PLATTE	050
Nwaobasi, Sam	ST. LOUIS METROP.	190
Nyazee, Muhammad A	ST. LOUIS METROP.	190

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O'Brien, Edward J	ST. LOUIS METROP.	190
O'Brien, Robert M	ST. LOUIS METROP.	190
O'Connell, Timothy	ST. LOUIS METROP.	190
O'Connor, Edward F	LAKE OF THE OZARKS	120
O'Connor, John J	F-G-W	074
O'Connor, Robert J	ST. LOUIS METROP.	190
O'Donnell, Francis E	ST. LOUIS METROP.	190
O'Farrell, Thos P	METRO MED	125
O'Hearne, John J	METRO MED	125
O'Keefe, James H	METRO MED	125
O'Keefe, Joseph D	ST. LOUIS METROP.	190
O'Keefe, Timothy	JASPER	102
O'Kell, Richard T	METRO MED	125
O'Malley, James F	METRO MED	125
O'Neal, Lawrence W	ST. LOUIS METROP.	190
O'Neal, Patricia L	ST. LOUIS METROP.	190
O'Neil, James H	METRO MED	125
O'Neil, Jerome H	ST. LOUIS METROP.	190
O'Reilly, D. Elliott	ST. LOUIS METROP.	190
O'Sullivan, Danl F	ST. LOUIS METROP.	190
Oakley, Margaret M	ST. LOUIS METROP.	190
Occeno, Victor G	OZARKS	166
Ockner, Samuel A	ST. LOUIS METROP.	190
Oehler, William F	CAPE GIRARDEAU	042
Oertli, Robert	ST. LOUIS METROP.	190
Oetter, Donald L	ST. LOUIS METROP.	190
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Ramirez-Inawat, Rebecca C	190	ST. LOUIS METROP.
Ramos, Americo G	125	METRO MED
Ramsey, J. Darryl	042	CAPE GIRARDEAU
*Ramsey, Jesse R	042	CAPE GIRARDEAU
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*Rankin, Wendell D	102	JASPER
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Rappold, Henry O	190	ST. LOUIS METROP.
Ratkin, Gary A	190	ST. LOUIS METROP.
Ratnam, Dasari V	125	METRO MED
Rau, Michael E	074	F-G-W
Rawlins, Fred E	042	CAPE GIRARDEAU
Rawson, Perry G	074	F-G-W
Ray, David J	206	SOUTH CENTRAL
*Ray, Terry L	026	BOONE
Raybould, Michael W	125	METRO MED
Raynor, Richard C	198	SALINE
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Reardon, Thomas M	050	CLAY-PLATTE
Reardon, Thos F	190	ST. LOUIS METROP.
Rector, Joe L	125	METRO MED
Reddy, Abbiah N	034	B-W-R-C
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Reddy, Nalini A	206	SOUTH CENTRAL
Reddy, R. Ramachandra	042	CAPE GIRARDEAU
Reddy, Sarvotham K	125	METRO MED
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Redmon, Conchita M	082	GREENE
Redmond, William S	030	BUCHANAN
Rednam, Krishnarao V	190	ST. LOUIS METROP.
Reed, Glen H	214	WEST CENTRAL
Reed, Leslie G	190	ST. LOUIS METROP.
Reed, Wm A	125	METRO MED
Reeder, Chas C	050	CLAY-PLATTE
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Reimer, Donald R	042	CAPE GIRARDEAU
Reinhard, Edward H	190	ST. LOUIS METROP.
Reinhardt, John R	125	METRO MED
Reisler, David M	190	ST. LOUIS METROP.
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Reister, Dorothy D	125	METRO MED
Reister, Philip D	125	METRO MED
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Remis, Robert E	030	BUCHANAN
Rendleman, Geo F	190	ST. LOUIS METROP.
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Rengachary, Setti S	125	METRO MED
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Renner, Gregory J	026	BOONE
Renner, John H	125	METRO MED
Repp, Theodore J	190	ST. LOUIS METROP.
Revare, Paul	050	CLAY-PLATTE
Revels, Harry	190	ST. LOUIS METROP.
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Reyes, Lirio M	082	GREENE
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Reynolds, Susan K	190	ST. LOUIS METROP.
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Rhoads, Jack V	125	METRO MED
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Ricci, Walter F	125	METRO MED
Rice, Karen H	058	COLE
Rice, Kathleen G	082	GREENE
Rich, Keith M	190	ST. LOUIS METROP.
Rich, Margaret M	190	ST. LOUIS METROP.
Richards, Dean D	125	METRO MED
Richards, Frank O	190	ST. LOUIS METROP.
Richardson, Geo A	074	F-G-W
Richardson, Lloyd D	125	METRO MED
Richardson, Marion W	125	METRO MED
Richardson, Thomas F	190	ST. LOUIS METROP.
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Richardson, Wm R	074	F-G-W
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Ridenhour, E. Gene	026	BOONE
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Ridings, Harold D	042	CAPE GIRARDEAU
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Ring, Lisa B	190	ST. LOUIS METROP.
Ringer, C. Nelson	042	CAPE GIRARDEAU
Rippe, William F	030	BUCHANAN
Rippey, John H	125	METRO MED
Rising, Dean R	082	GREENE
Ritter, C J	042	CAPE GIRARDEAU
Ritter, Carl F	042	CAPE GIRARDEAU
Ritter, Hubert A	190	ST. LOUIS METROP.
Ritter, Ray A	042	CAPE GIRARDEAU
Ritter, Raymond A	042	CAPE GIRARDEAU
Ritter, William S	125	METRO MED
Ritterbusch, James K	150	NORTHEAST
Rivera, Minerva M	078	GRAND RIVER
Rivera, Pepito C	078	GRAND RIVER
Rizzo, Adolfo E	190	ST. LOUIS METROP.
Robb, Christine A	125	METRO MED
Robben, G. Garry	190	ST. LOUIS METROP.
Robbins, Philip L	190	ST. LOUIS METROP.
Robbins, Thomas D	058	COLE
Roberts, Charles C	125	METRO MED
Roberts, Fred F	125	METRO MED
Roberts, Grosvenor G	125	METRO MED
Roberts, Harold K	190	ST. LOUIS METROP.
Roberts, Howard H	102	JASPER
Roberts, John P	190	ST. LOUIS METROP.
Roberts, Perry T	042	CAPE GIRARDEAU
Roberts, Phyllis G	030	BUCHANAN
Roberts, Theodore W	202	SEMO
Robertson, Frank G	190	ST. LOUIS METROP.
Robertson, Wm D	034	B-W-R-C
Robinett, Wade V	125	METRO MED
Robinson, Arthur W	125	METRO MED
Robinson, Edith C	190	ST. LOUIS METROP.
Robinson, Ernest K	125	METRO MED
Robinson, Gary L	082	GREENE
Robinson, Nicholas F	070	DUNKLIN
Robinson, Ronald L	042	CAPE GIRARDEAU
Robinson, Van M	050	CLAY-PLATTE
Robinson, William A	125	METRO MED
Robinson, Wm J	125	METRO MED

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Rogers, John T BUCHANAN	030
Rogers, Joseph Drewry GREENE	082
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Roh, Lynn H METRO MED	125
Rohatgi, Reeta CAPE GIRARDEAU	042
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Russell, Nancy R CLAY-PLATTE	050
***Russell, Robert B** CAPE GIRARDEAU	042
Russell, Robt K METRO MED	125
Russell, Steven L CLAY-PLATTE	050
Rutherford, Barry D METRO MED	125
Rutherford, James L ST. LOUIS METROP.	190
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Ryan, Robert A GREENE	082
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Ryan, Thomas J COLE	058
Ryser, Carol A METRO MED	125

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Sabapathy, Shawn JASPER	102
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Sabet, Abdollah A ST. LOUIS METROP.	190
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Sanders, Donald C METRO MED	125
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Sanders, Jack S COLE	058
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Sauer, Gordon C METRO MED	125
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Sauer, Paul E GREENE	082
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Scacewater, Rick JASPER	102
Scales, Margaret B METRO MED	125
Scanlon, Charlotte D METRO MED	125
***Scanlon, Robert C** GREENE	082
Scarborough, Betty F METRO MED	125
Scarborough, Mark R METRO MED	125
Scearce, Robert L COLE	058
Schaaf, Robert O BUCHANAN	030
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Scharf, Daniel	METRO MED	125
Scheele, Paul M	ST. LOUIS METROP.	190
Scheer, George E	ST. LOUIS METROP.	190
Scheff, Robert J	ST. LOUIS METROP.	190
Scheibe, Robert G	ST. LOUIS METROP.	190
Scheible, Robert F	ST. LOUIS METROP.	190
***Schekorra, Fred W**	COLE	058
***Schekorra, Frederick M**	LAKE OF THE OZARKS	120
Schell, James A	BOONE	026
Schengber, John S	ST. LOUIS METROP.	190
Scherer, Stephen	METRO MED	125
Scherr, David D	COLE	058
Schertz, Truman B	CLAY-PLATTE	050
Scheu, James H	ST. LOUIS METROP.	190
Schewe, Elmer J	BOONE	026
Schierman, Wm D	ST. LOUIS METROP.	190
Schiffmacher, Jack E	METRO MED	125
Schillie, Gene A	METRO MED	125
Schlafly, Bruce S	ST. LOUIS METROP.	190
Schlafly, Edward F	ST. LOUIS METROP.	190
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Schlansky, Seymour M	ST. LOUIS METROP.	190
Schlossman, David M	BOONE	026
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Schlozman, Danl L	METRO MED	125
Schmid, Tania L	ST. LOUIS METROP.	190
Schmidt, Dennis A	ST. LOUIS METROP.	190
Schmidt, Edwin H	ST. LOUIS METROP.	190
Schmidt, Edwin H	ST. LOUIS METROP.	190
Schmidt, Herbert J	MSMA	002
Schmidt, Jerome H	COLE	058
Schmidt, Martin P	ST. LOUIS METROP.	190
Schmidt, Thomas L	METRO MED	125
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Schneider, J. Michael	GREENE	082
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Schneider, Robert J	ST. LOUIS METROP.	190
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Schoeck, Albert F	ST. LOUIS METROP.	190
Schoenberger, John R	CAPE GIRARDEAU	042
Schoenecker, Perry L	ST. LOUIS METROP.	190
***Schoenfeld, Roger H**	JASPER	102
Schoengarth, Lowell D	BOONE	026
Schoentag, John S	ST. LOUIS METROP.	190
Schokker, Johannes	COLE	058
Schondelmeyer, R. Wade	C-M-M-R	046
Schonfeld, Gustav	ST. LOUIS METROP.	190
Schoolman, Arnold	METRO MED	125
Schoonmaker, Gene	GREENE	082
Schopp, Alvin C	ST. LOUIS METROP.	190
Schottman, Gerhard W	METRO MED	125
Schranck, Chas R	ST. LOUIS METROP.	190
Schreiber, David J	ST. LOUIS METROP.	190
Schreiber, Norman J	GREENE	082
Schrick, Richard E	ST. LOUIS METROP.	190
Schroeder, C. Eric	METRO MED	125
Schroeder, Cygnet A	METRO MED	125
Schroeder, Walter A	CAPE GIRARDEAU	042
Schroff, Carle E	GREENE	082
Schuessler, Edward C	ST. LOUIS METROP.	190
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Schuh, Marlys E	ST. LOUIS METROP.	190
Schulman, Jeffrey I	ST. LOUIS METROP.	190
Schultz, Earl R	ST. LOUIS METROP.	190
Schultz, Irwin	ST. LOUIS METROP.	190
Schulz, Richard C	ST. LOUIS METROP.	190
Schutz, John P	CLAY-PLATTE	050
Schutz, Richard B	METRO MED	125
Schwartz, Eugene J	GREENE	082
Schwartz, Henry G	ST. LOUIS METROP.	190
Schwartz, Howard R	GREENE	082
Schwartz, Howard I	METRO MED	125
Schwartz, Melvin M	ST. LOUIS METROP.	190
***Schwarze, Robert F**	ST. LOUIS METROP.	190
Schwegler, Robert G	METRO MED	125
Schweiss, John F	ST. LOUIS METROP.	190
Schweitzer, James M	ST. LOUIS METROP.	190
Scott, C. Alan	SALINE	198
Scott, E. David	COLE	058
Scott, Elwin P	ST. LOUIS METROP.	190
Scott, Hillard L	MSMA	002
Scott, Jamie A	GREENE	082
Scott, Kenneth F	HENRY	086
Scott, Robert W	GREENE	082
Scott, Wendell J	GREENE	082
Scowley, John E	LAFAYETTE-RAY	118
Scully, Bruce D	WEST CENTRAL	214
Scully, Thomas F	ST. LOUIS METROP.	190
Seabaugh, Janice L	AUDRAIN	014
Seabaugh, Wm L	CAPE GIRARDEAU	042
Seagrave, Richard A	GREENE	082
Sealby, Robert L	BUCHANAN	030
Seale, Stuart A	GREENE	082
Sedgwick, William G	ST. LOUIS METROP.	190
See, William M	BOONE	026
Seeck, Linda E	F-G-W	074
Seed, John C	ST. LOUIS METROP.	190
Seeley, James J	ST. LOUIS METROP.	190
Seely, Clark W	METRO MED	125
Seib, George A	ST. LOUIS METROP.	190
Seiden, Gerald D	METRO MED	125
Seitz, Elson F	METRO MED	125
Selhorst, John B	ST. LOUIS METROP.	190
Seligson, Frederic L	METRO MED	125
Sells, Kenneth J	METRO MED	125
Senturia, Hyman R	ST. LOUIS METROP.	190
Seralathan, Ramasamy	GRAND RIVER	078
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Sertl, James F	ST. LOUIS METROP.	190
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Seshumurty, Vimala	METRO MED	125
Sessions, Donald G	ST. LOUIS METROP.	190
Sexton, Daniel L	ST. LOUIS METROP.	190
Shackter, Bruce I	GREENE	082
Shaeffer, James T	GREENE	082
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Shah, Anwar	ST. LOUIS METROP.	190
Shah, Jayendra H	BOONE	026
Shah, Jitendra P	ST. LOUIS METROP.	190
Shah, Modaser	ST. LOUIS METROP.	190
Shah, Narendra	BUCHANAN	030
Shah, Ramesh R	JASPER	102
Shah, Sheila	BUCHANAN	030
Shahan, Philip T	ST. LOUIS METROP.	190
Shaikun, Gerald L	ST. LOUIS METROP.	190
Shakil, Mohammad	CAPE GIRARDEAU	042
Shalet, Malcolm F	METRO MED	125
Shanahan, Mary P	JASPER	102
Shanahan, Philip J	ST. LOUIS METROP.	190
Shands, Courtney	ST. LOUIS METROP.	190
Shane, Ramon A	GREENE	082
Shaner, Thomas P	ST. LOUIS METROP.	190
Shank, Robert E	ST. LOUIS METROP.	190
Shapero, James A	BOONE	026
Shapiro, A. James	GREENE	082
Shapiro, Herbert N	ST. LOUIS METROP.	190
Shapiro, Susan J	ST. LOUIS METROP.	190
Shapleigh, John B	ST. LOUIS METROP.	190
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Shatz, Burton A	ST. LOUIS METROP.	190
Shaw, David A	MID-MISSOURI	135
Shaw, James T	F-G-W	074
Shaw, Richard C	ST. LOUIS METROP.	190
Shaw, Robert D	SOUTH CENTRAL	206
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Sheahon, John A	METRO MED	125
Shealy, C. Norman	GREENE	082
Shechter, Nathan	METRO MED	125
Sheehan, Michael B	METRO MED	125
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Sheffner, Paul W	ST. LOUIS METROP.	190
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Shelley, William C	125	METRO MED
Shelton, Becky R	190	ST. LOUIS METROP.
Shelton, Earl W	190	ST. LOUIS METROP.
Shelton, R. Wayne	082	GREENE
Shen, Anthony S	190	ST. LOUIS METROP.
Shen, Hang C	190	ST. LOUIS METROP.
Shen, Jerome T	190	ST. LOUIS METROP.
Shen, Winston W	190	ST. LOUIS METROP.
Sher, Allyn L	026	BOONE
Sheridan, John J	190	ST. LOUIS METROP.
Sherman, Neal J	125	METRO MED
Sherman, W. Gary	190	ST. LOUIS METROP.
Sherrod, Duane W	102	JASPER
***Sherrod, Glenn M**	190	ST. LOUIS METROP.
Sherwin, Charles S	190	ST. LOUIS METROP.
Sheverini, James A	125	METRO MED
Shevlin, Chas F	030	BUCHANAN
Shieber, Wm	190	ST. LOUIS METROP.
Shields, John B	190	ST. LOUIS METROP.
Shields, Lawrence S	082	GREENE
Shifrin, Alexander	125	METRO MED
Shimshak, Thomas M	125	METRO MED
Shine, Thomas E	190	ST. LOUIS METROP.
***Shipman, Wade M**	082	GREENE
Shitut, Ravindra V	190	ST. LOUIS METROP.
Shively, Raymond E	190	ST. LOUIS METROP.
Shively, Robert A	190	ST. LOUIS METROP.
Shockley, Clarence J	125	METRO MED
Shore, Bernard L	190	ST. LOUIS METROP.
Short, Charles D	190	ST. LOUIS METROP.
Short, Howard N	074	F-G-W
Shoss, Milton	042	CAPE GIRARDEAU
Shoults, Nicholas F	082	GREENE
Shroff, Kumkum	190	ST. LOUIS METROP.
Shuey, Herbert H	125	METRO MED
Shuler, Frederick N	125	METRO MED
Shull, G D	058	COLE
Shultz, Thomas M	082	GREENE
Shuman, Joseph S	190	ST. LOUIS METROP.
Shuman, Robert B	190	ST. LOUIS METROP.
Shyken, Herman	190	ST. LOUIS METROP.
Sicard, Gregorio A	190	ST. LOUIS METROP.
Sicat, Alfonso V	110	JOHNSON
Siddiqui, Farzanna Q	190	ST. LOUIS METROP.
Sides, Stanley D	042	CAPE GIRARDEAU
Siegel, Barry A	190	ST. LOUIS METROP.
Siegel, Carl D	125	METRO MED
Siegel, Charles	050	CLAY-PLATTE
Siemers, Geo E	190	ST. LOUIS METROP.
Siesener, Herbert H	190	ST. LOUIS METROP.
Sigmund, Charles J	190	ST. LOUIS METROP.
Sigmund, Charles A	190	ST. LOUIS METROP.
Silber, Sherman J	190	ST. LOUIS METROP.
Siler, Thomas M	189	ST CHARLES-LINCOLN
***Sill, William**	189	ST CHARLES-LINCOLN
Silliman, York E	030	BUCHANAN
Silsby, Harry D	082	GREENE
Silver, Bernd	190	ST. LOUIS METROP.
Silver, Donald	026	BOONE
Silverberg, Bruce	002	MSMA
Silverberg, Charles	190	ST. LOUIS METROP.
Silvers, L. Michael	125	METRO MED
Simmons, Donald D	125	METRO MED
Simmons, Jess S	102	JASPER
Simmons, John L	125	METRO MED
Simon, David L	190	ST. LOUIS METROP.
Simon, Gracita S	050	CLAY-PLATTE
Simon, Nathan M	190	ST. LOUIS METROP.
Simon, Sanford	125	METRO MED
Simons, Paul S	190	ST. LOUIS METROP.
Simowitz, Fredric M	189	ST CHARLES-LINCOLN
Simpson, Albert P	082	GREENE
***Simpson, Floyd D**	082	GREENE
Simpson, Joseph	190	ST. LOUIS METROP.
Simril, Wayne A	190	ST. LOUIS METROP.
Sinasa, Surat	070	DUNKLIN
Sincox, Chas H	074	F-G-W
Singer, Jonas	190	ST. LOUIS METROP.
Singh, Daljeet R	118	LAFAYETTE-RAY
Singh, Linda C	125	METRO MED
Singleton, John M	125	METRO MED
Singleton, Marvin A	102	JASPER
Sinnett, Mark F	125	METRO MED
Siripipat, Pallop	014	AUDRAIN
Sirridge, Marjorie J	125	METRO MED
Sisk, James C	190	ST. LOUIS METROP.
Sislen, Donald R	190	ST. LOUIS METROP.
Sisler, Maynard L	070	DUNKLIN
Sisson, Richard G	190	ST. LOUIS METROP.
Siu, Kenneth K C	058	COLE
Skelley, Mark J	102	JASPER
Skibba, Joseph L	026	BOONE
Skillman, Robt K	125	METRO MED
Skimming, W. Lee	190	ST. LOUIS METROP.
Skinner, John S	190	ST. LOUIS METROP.
Skinner, John T	125	METRO MED
Sklenar, Donald E	030	BUCHANAN
Skor, Donald A	190	ST. LOUIS METROP.
Slack, Melinda R	082	GREENE
Slahorek, George J	135	MID-MISSOURI
Slankard, J E	125	METRO MED
Slaughter, Carl R	050	CLAY-PLATTE
Slentz, Edwin L	125	METRO MED
Slentz, Wm A	125	METRO MED
Sletten, Ivan W	190	ST. LOUIS METROP.
Slocum, Stephen G	190	ST. LOUIS METROP.
Sly, Anne K	125	METRO MED
Smeltzer, Frederick M	120	LAKE OF THE OZARKS
Smid, Anne A	082	GREENE
Smid, David M	082	GREENE
Smiley, William L	190	ST. LOUIS METROP.
Smit, Herbert M	190	ST. LOUIS METROP.
Smith, Arthur B	125	METRO MED
Smith, Benj F	190	ST. LOUIS METROP.
Smith, Bruce D	030	BUCHANAN
Smith, C. Byron	125	METRO MED
***Smith, Charles H**	050	CLAY-PLATTE
Smith, Claude F	206	SOUTH CENTRAL
***Smith, Cyrus D**	030	BUCHANAN
Smith, Danny A	002	MSMA
Smith, David Lambuth	125	METRO MED
Smith, Dennis W	102	JASPER
Smith, Dermott A	190	ST. LOUIS METROP.
Smith, Elbert E	125	METRO MED
Smith, Emily L	190	ST. LOUIS METROP.
Smith, Garland F	190	ST. LOUIS METROP.
Smith, Herbert P	190	ST. LOUIS METROP.
Smith, Hubert E	125	METRO MED
Smith, Hugh R	190	ST. LOUIS METROP.
Smith, J. Ned	026	BOONE
Smith, James B	190	ST. LOUIS METROP.
Smith, Katherine W	125	METRO MED
Smith, Kathleen	190	ST. LOUIS METROP.
Smith, Kenneth B	074	F-G-W
Smith, Kenneth R	190	ST. LOUIS METROP.
Smith, Morton E	190	ST. LOUIS METROP.
Smith, O. Dale	125	METRO MED
Smith, Patrick A	026	BOONE
Smith, Peter G	190	ST. LOUIS METROP.
Smith, Porter	070	DUNKLIN
Smith, Reid C	125	METRO MED
Smith, Robert W	190	ST. LOUIS METROP.
Smith, Robt W	078	GRAND RIVER
Smith, Roland T	102	JASPER
Smith, Timothy W	125	METRO MED
Smith, W. Russell	102	JASPER
Smith, Wallace B	125	METRO MED
Smith, Wm J	086	HENRY
Smithson, Debra S	042	CAPE GIRARDEAU
Smolik, Martin J	102	JASPER
Smoller, Martin B	189	ST CHARLES-LINCOLN
Snavely, Sharon R	125	METRO MED
Snead, William H	082	GREENE
Sneid, David S	125	METRO MED
Snidle, William F	106	JEFFERSON
Snow, Emasue	082	GREENE
Snow, Jon F	082	GREENE
Snyder, Christopher H	082	GREENE
Sobky, George H	190	ST. LOUIS METROP.
Soeldner, James O	125	METRO MED
Soha, Joseph J	026	BOONE
Sohn, Richard	190	ST. LOUIS METROP.
Solanki, Nareshkumar J	190	ST. LOUIS METROP.
Sollars, Eric G	030	BUCHANAN
Solomon, Felix G	190	ST. LOUIS METROP.
Solomon, George D	026	BOONE
Soltys, Stephen M	026	BOONE
Sommer, Conrad S	190	ST. LOUIS METROP.
Sommer, Rand W	002	MSMA
Sommer, Ross B	190	ST. LOUIS METROP.

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Somoza, Jose R	CLAY-PLATTE	050
Soonattrakul, Wuthisak	DUNKLIN	070
Soorya, Narendir T	ST. LOUIS METROP.	190
Sopuch, John A	ST. LOUIS METROP.	190
Sosebee, Lee A	BOONE	026
Sosna, Jacob P	ST. LOUIS METROP.	190
Soto, Albert A	ST. LOUIS METROP.	190
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Sowash, James J	BOONE	026
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Spalding, David L	GREENE	082
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Speckman, Jerry M	METRO MED	125
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Spector, Gershon	ST. LOUIS METROP.	190
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Spencer, Donald M	METRO MED	125
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Spradlin, Larry D	METRO MED	125
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Spray, Thomas L	ST. LOUIS METROP.	190
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Spurgeon, Milo J	BOONE	026
Spurgeon, Stephen	ST. LOUIS METROP.	190
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***Stahly, Randall L**	CAPE GIRARDEAU	042
Stahr, William D	CAPE GIRARDEAU	042
Stallard, Donald J	BUCHANAN	030
Stamatis, John J	GREENE	082
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Stanford, Carol A	METRO MED	125
Stanley, Charles G	METRO MED	125
Stanley, John H	METRO MED	125
Stanton, Danny K	METRO MED	125
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Statland, Morris	METRO MED	125
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Sweet, Robert A	GREENE	082
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Swope, Joseph A	ST. LOUIS METROP.	190
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Szoko, Edward	ST. LOUIS METROP.	190
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Taege, Alan J	BUCHANAN	030
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Talbert, Clifford R	CAPE GIRARDEAU	042
Talbott, Lawrence B	METRO MED	125
Talwar, Tara	ST. LOUIS METROP.	190
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Tanaka, Geo M	ST. LOUIS METROP.	190
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Tanphaichitr, Kongsak	ST. LOUIS METROP.	190
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Taylor, Eugene D	ST. LOUIS METROP.	190
Taylor, John R.W.	METRO MED	125
Taylor, Leon A	COLE	058
Taylor, Philip W	CAPE GIRARDEAU	042
Taylor, Steve J	AUDRAIN	014
Taylor, William K	GREENE	082
Taylor, Wm E	GREENE	082
Tayob, Anver A	ST. LOUIS METROP.	190
***Tedrick, Phillip D**	CAPE GIRARDEAU	042
Teeter, Brian H	JASPER	102
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Templer, Jerry W	BOONE	026
Tendai, Mark M	GREENE	082
Tenney, Jackie	METRO MED	125
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Tepper, Arnold	ST. LOUIS METROP.	190
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Terry, Boyd E	BOONE	026
Terry, James W	CAPE GIRARDEAU	042
Terry, James F	GREENE	082
Terschluse, David A	ST. LOUIS METROP.	190
Tesmer, Timothy A	GREENE	082
Tess, Allen F	ST. LOUIS METROP.	190
Tess, Melvin J	ST. LOUIS METROP.	190
Tessier, John E	ST. LOUIS METROP.	190
***Tewis, Huey D**	CAPE GIRARDEAU	042
Thalblum, Harvey	METRO MED	125
Thale, Thomas R	ST. LOUIS METROP.	190
Thawley, Stanley E	ST. LOUIS METROP.	190
Thedinger, Bradley S	METRO MED	125
Theel, Otto W	METRO MED	125
Thibeault, Donald W	METRO MED	125
Thiel, J. Allen	ST. LOUIS METROP.	190
Thiele, Belmont R	ST. LOUIS METROP.	190
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Thies, Jerome H	WEST CENTRAL	214
Thoma, George E	ST. LOUIS METROP.	190
Thomas, Alexis G	METRO MED	125
Thomas, Christopher Y	METRO MED	125
Thomas, Fred A	CLAY-PLATTE	050
Thomas, Horace E	BOONE	026
Thomas, J. Regan	ST. LOUIS METROP.	190
Thomas, James J	METRO MED	125
Thomas, Leslie D	CLAY-PLATTE	050
Thomas, Matthew A	ST. LOUIS METROP.	190
***Thomas, Norvin E**	AUDRAIN	014
Thomas, Robert M	BOONE	026
***Thomas-Richards, Jose R**	METRO MED	125
Thomasson, David D	GREENE	082
Thomasson, Jeffrey L	ST. LOUIS METROP.	190
Thomasson, Mary W	ST. LOUIS METROP.	190
Thomasson, Robert E	ST. LOUIS METROP.	190
Thompson, David E	METRO MED	125
Thompson, F Gregg	BUCHANAN	030
Thompson, Frederick E	CLAY-PLATTE	050
Thompson, Frederick L	WEST CENTRAL	214
Thompson, M. Bryant	ST. LOUIS METROP.	190
Thompson, Paul D	CAPE GIRARDEAU	042
Thompson, Scott W	METRO MED	125
Thompson, Susan	CLINTON	054
Thompson, Exec V.P., James E	Exectutive Secys.	001
Thornton, Fred H	SEMO	202
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Thorpe, William P	CAPE GIRARDEAU	042
Throne, Ben J	METRO MED	125
Thurmann, Manfred	ST. LOUIS METROP.	190
Tice, Wayne K	METRO MED	125
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Tominack, Rebecca L	ST. LOUIS METROP.	190
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Tompson, Robt V	C-M-M-R	046
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Trecha, Randal R	BOONE	026
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Trimble, Geo X	METRO MED	125
Trinidad, Hermanito R	GRAND RIVER	078
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Troxil, Elizabeth B	GREENE	082
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*Young, Michael A	COLE	058
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Roster of Members by Component Society

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002 — MSMA ONLY

Ashby, Richard NS
533 Couch Ave. #181
St. Louis, MO 63122
314-965-8282

Beckman, Robert F GS
6411 Chippewa
St. Louis, MO 63109
314-351-1930

Belshe, Robert B ID
1402 S. Grand Blvd.
St. Louis, MO 63104
314-577-8648

Bollier, Barbara G AN
1800 E. Meyer
Kansas City, MO 64132
816-523-0100

Bopp, Sandra L AN
8822 Egger Rd.
Brentwood, MO 63144
314-577-8750

Botney, Kathryn OBG
224 S. Woods Mill Ste 680-S
Chesterfield, MO 63017
314-576-0930

Chand, Suresh P
P. O. Box 2179
Florissant, MO 63032
314-868-9400

Chin, Mark Maw-Chang IM
222 S. Woods Mill Rd #N510
Chesterfield, MO 63017
314-434-8016

Chintapalli, Rajeswari R AN
2418 Fairoyal Dr.
St. Louis, MO 63131
314-577-8750

Clayton, Bradford E OBG
5701 Delmar
St. Louis, MO 63112
314-367-7848

Corry, James M PDA
114 North Taylor
St. Louis, MO 63108
314-534-6700

Crisp, N. Denney GS
17331 E. 40 Highway Ste 112
Independence, MO 64055
816-373-8490

Destouet, Judy R
8 Spoede Lane
St. Louis, MO 63141

Frank, Gael R ORS
2750 Hospital Dr. Ste 600
No Kansas City, MO 64116
816-471-2131

Galgani, John P PD
1125 Graham Rd.
Florissant, MO 63031
314-838-7849

Gambill, Gary L IM
628 Stablestone
Chesterfield, MO 63107
314-362-9123

Gendel, Jonathan IM
506 NW Murray Road
Lee's Summit, MO 64063
816-525-4400

Hamilton, Dennison R ORS
Exec Park Mid-America Clinic
6401 Front St.
Kansas City, MO 64120
816-241-4477

Heim, Mary L EM
9705 NW 77th Terrace
Kansas City, MO 64152
816-741-2531

Hicks, Marshall E R
510 S. Kingshighway Blvd.
St. Louis, MO 63110
314-362-2900

Holcombe, Faith H IM
77 Westport Plaza Suite 168
St. Louis, MO 63146
314-878-8377

Howell, David T FP
555 Howdershell
Florissant, MO 63031
314-921-6665

Kirby, Chris IM
401 Pine St
St. Louis, MO 63102

Kleinschmidt, Donn C
1221 S. Grand Psych
St. Louis, MO 63104
314-577-8728

Kuske, Robert R TR
Wash U Med Sch Rad Onc Ctr
Box 8131 4939 Audubon
St. Louis, MO 63110
314-362-8566

Lonergan, James H AN
Dept of Anes St. Lukes Hosp
4400 Wornall Rd.
Kansas City, MO 64111
816-932-2033

Mills, Melissa J IM
1000 E. 50th St. Suite 350
Kansas City, MO 64110
816-361-9615

Oliver, G. Charles CD
4 Creekside Lane
St. Louis, MO 63141
314-946-7838

Pilla, Thomas J IM
1102 Turf Runner Ct.
Florissant, MO 63034

Polmar, Stephen H
Children's Hospital
400 S. Kingshighway
St. Louis, MO 63110
314-454-6124

Routburg, Mark S IM
224 S. Woodsmill
St. Louis, MO 63017
314-576-5014

Schmidt, Herbert J GYN
4400 Wornall %St. Lukes
Kansas City, MO 64111
816-932-3300

Scott, Hillard L FP
3645 Oakmount
St. Louis, MO 63121
314-382-8899

Silverberg, Bruce PSF
10550 Quivira, Suite 290
Overland Park, KS 66215

Smith, Danny A IM
10855 Pear Blossom Ct.
St. Ann, MO 63074
314-241-2200

Sommer, Rand W IM
1034 South Brentwood Blvd
St. Louis, MO 63117
314-721-0666

Swanson, Eric PS
8721 Catalina Dr.
Prairie Village, KS 66207
816-561-1414

Westblom, T. Ulf ID
St. L Univ
1402 S. Grand Blvd.
St. Louis, MO 63104
314-577-8648

Woods, Gray W OPH
2316 Kenwood
Kansas City, MO 64108
816-556-3482

***Zipper, Ronald** ORS
17421 Medical Center Pkw
Independence, MO 64057
816-373-2312

010 — ANDREW

Baker, Warren C FP
6 Evergreen
St. Joseph, MO 64505

Kelley, Gilbert B FP
1104 W. Main
Savannah, MO 64485

Villahermosa, Juanito L GS
509 S. 11th
Savannah, MO 64485
816-324-3121

014 — AUDRAIN

Ahmann, Thomas M U
Landmark Bldg.
Mexico, MO 65265

Ajans, Zaki A P
704 E Monroe
Mexico, MO 65265
314-581-1785

Bunge, Nancy J PD
Old Farm Prof Ctr Suite B-E.
Mexico, MO 65265
314-581-5011

Carlson, John V PTH
Audrain Med Ctr
620 E. Monroe
Mexico, MO 65265
314-581-1760

Cohen, Harry B AN
Anesthesia Specialists
P O Box 598
Mexico, MO 65265
314-443-1161

Comfort, Geo D FP
Medical Bldg
626 Summit
Mexico, MO 65265
314-581-2348

Corrado, Joseph A GS
809 Medical Park Dr. #103
Mexico, MO 65265
314-581-3991

Critchlow, J. Thomas GS
809 Medical Park Drive
Mexico, MO 65265
314-581-8423

Cyriac, George K DR
620 E. Monroe
Mexico, MO 65265
314-581-1760

Davis, Leonard L ORS
1124 Tamaron Place
St. Louis, MO 63131
314-993-6855

Ekern, H. Peter FP
626 Summit
Mexico, MO 65265
314-581-2348

Forney, Joseph W CD
201 E. Monroe-Landmark Bldg.
Mexico, MO 65265
314-581-3240

Gifford, David L GE
714 Medical Park Drive
Mexico, MO 65265
314-581-2152

Hoxworth, Gerald M DR
415 E Monroe
Mexico, MO 65265
314-581-1760

Huq, MD N OPH
Huq Professional Eye Service
Mexico Prof Bldg
Mexico, MO 65265
314-581-7790

Jolly, Ben L ORS
720 Medical Park Drive
Mexico, MO 65265
314-581-6831

Jolly, Benj N GS
1421 North Jefferson
Mexico, MO 65265
314-581-2780

Jones, Michael D OBG
626 Summit
Mexico, MO 65265
314-581-7040

Kallenbach, Glen P GP
Rt 5
Mexico, MO 65265
314-581-1356

Lankford, Harold D GP
9 Park Circle
Mexico, MO 65265
314-581-2348

Mullen, Mary E IM
626 Summit
Mexico, MO 65265
314-581-8530

Muraywid, Ahmad H PD
626 Summit Suite I
Mexico, MO 65265
314-581-0604

Rodes, Ned D GS
625 Lakeview
Mexico, MO 65265

Seabaugh, Janice L HNS
809 Medical Park Dr.
Mexico, MO 65265
314-581-7608

Siripipat, Pallop OBG
626 Summit St
Mexico, MO 65265
314-581-7040

Taylor, Steve J GP
321 North Washington
Mexico, MO 65265
314-581-1129

---

*Doctor of osteopathy.

Thomas, Norvin E PUD
809 Medical Park Drive
Mexico, MO 65265
314-581-8494

Welsh, Thomas E IM
809 Medical Park Dr. #104
Mexico, MO 65265
314-581-1040

Wilbers, Raymond H GS
Old Farm Professional Bldg
Mexico, MO 65265
314-581-2030

018 — BARTON

Arnold, Herbert M GP
108 W. 1St Terr.
Lamar, MO 64759
417-682-5584

Bickel, Vern T GS
202 West 2nd St.
Lamar, MO 64759
417-682-2161

Cain, Alvin R GP
P O Box 572
Lamar, MO 64759
417-682-3544

Carroll, Thos W GP
1204 Gulf Street
Lamar, MO 64759
417-682-5584

026 — BOONE

Abadir, Rushdy TR
500 Keene
Radiation Therapy
Columbia, MO 65201
314-443-4531

Abele, Wm A IM
620 Main St
Boonville, MO 65233
816-882-7481

Abernathie, Dennis L ORS
400 Keene St.
P.O. Box O
Columbia, MO 65205
314-443-2402

Ailor, Edgar I OTO
1990 W. Highpoint Lane
Columbia, MO 65203
314-874-3300

Allen, William Corwin ORS
Dept of Orthopaedics
M562 Health Science Ctr
Columbia, MO 65212
314-882-7189

Allen, Wm C GPM
508 W. Briarwood Lane
Columbia, MO 65203
314-445-4181

Allen, Robert W PM
2007 Country Club Drive
Columbia, MO 65201

Alpert, Martin A IM
Room IE-65 Hlth Sciences Ctr
Columbia, MO 65212
314-882-2511

Alyea, James O AN
2506 Lynnwood Drive
Columbia, MO 65203
314-449-1207

Amromin, George D PTH
104 Defoe Court
Columbia, MO 65203

Anderson, Philip C D
Clinic 3 Health Science Ctr
Columbia, MO 65212
314-882-3141

Anderson, Thos R P
204 Berrywood Med. Arts Bldg
3401 Berrywood Dr.
Columbia, MO 65201
314-449-2661

Anderson, Ivan A PH
2208 Lincoln Rd.
Bettendorf, IA 52722

Ansbacher, Linda E PTH
Dept of Pathology
M211 Health Science Ctr
Columbia, MO 65212
314-882-1237

Arnold, Richard C PH
814 Yale
Columbia, MO 65203

Arthaud, J B PTH
Pathology Laboratories Inc.
P.O. Box 7406
Columbia, MO 65205
314-886-4600

Arthur, Gerald L PTH
P.O. Box 7406
Columbia, MO 65205
314-886-4600

Asel, Norman D D
3419 Augusta Dr.
Columbia, MO 65203

Asher, Irving M N
Stephens Park Medical Bldg.
1701 E. Broadway
Columbia, MO 65201
314-449-3404

Austin, James L GS
Dept of Surgery M580
One Hospital Dr.
Columbia, MO 65212
314-882-8145

Baeker, Thomas R IM
Hematology-Oncology Assoc.
3401 Berrywood Drive
Columbia, MO 65201
314-874-7800

Baker, Sherwood FP
2620 Walther Ct.
Columbia, MO 65203

Barbee, Chas W GS
1701 E. Broadway Suite 3
Columbia, MO 65201
314-876-1720

Beck, Marcus R PTH
601 East Rockcreek Drive
Columbia, MO 65203
314-445-6165

Beckett, Wm. Wilson ORS
201 W. Broadway
Columbia, MO 65203
314-875-4646

Beitman, Bernard D P
Dept of Psychiatry
C-6 Health Science Ctr
Columbia, MO 65212
314-882-2511

Belden, Jeffery L FP
1506 E. Broadway
Columbia, MO 65201
314-449-0808

Birkby, Wm F FP
1506 East Broadway
Columbia, MO 65201
314-449-0808

Blackburn, Michael D EM
Boone Hospital Center
1600 E. Broadway
Columbia, MO 65201
314-875-3501

Blackwell, Chas W DR
201 W Broadway
Columbia, MO 65203
314-443-7430

Boles, Murray R
500 Keene St.
Columbia, MO 65201
314-443-4531

Bonham, Roger D OPH
500 Keene St.
Columbia, MO 65201
314-449-3846

Bourgeois, Curtis H PTH
P. O. Box 7406
Columbia, MO 65205
314-886-4600

Bradley, Wm W GP
120 N Rollins
Centralia, MO 65240
314-682-2101

Braun, Sheldon R IM
Univ of MO Columbia MA419
One Hospital Drive
Columbia, MO 65212
314-882-2991

Braunschweig, Ralph AN
Dept of Anes 3N15 HSC
Columbia, MO 65212
314-443-2511

Brukardt, Diane T IM
Student Health Service
Univ of Mo
Columbia, MO 65211
314-882-7481

Bruner, Claude R OPH
Rte 70 Box 120
Camdenton, MO 65020

Bruno, Ellen L FP
1506 E. Broadway
Columbia, MO 65201
314-449-0808

Bryant, Lester R CDS
MA204 Med Science Bldg.
Columbia, MO 65212
314-882-1566

Bucher, William C PTH
P.O. Box 7406
Columbia, MO 65205
314-886-4600

Buchert, Peter K ORS
400 Keene St. POBox 0
Columbia, MO 65205
314-443-2402

Bumgarner, Roger W AN
1501 Rustic Road
Columbia, MO 65201
314-442-5448

Bumgarner, James E U
1315 Rustic Rd.
Columbia, MO 65201

Burns, Robert P OPH
Dept of Ophalmology
Mason Institute of Oph
Columbia, MO 65212
314-882-1027

Burns, Thos W IM
310 E Brandon Rd
Columbia, MO 65203

Butt, James H GE
A220C VA Hospital
800 Hospital Dr.
Columbia, MO 65201
314-443-2511

Bynum, Wm R PTH
3208 Woodvalley Way
Columbia, MO 65203

Caldwell, Charles W PTH
Dept of Pth MA263
MO Sch of Med.
Columbia, MO 65212
314-882-1283

Cardwell, Michael S OBG
Dept of OBG N610 HSC
1 Hospital Drive
Columbia, MO 65212
314-882-7937

Carnahan, Chas E PD
Boone Clinic
401 Keene St.
Columbia, MO 65201
314-876-1620

Carter, Ronald D ORS
400 Keene St.
P. O. Box O
Columbia, MO 65205
314-443-2402

Carter, James S CDS
1121 Scott Station Rd.
Jefferson City, MO 65109

Chalkley, Judson I DR
614 W. Stewart Rd.
Columbia, MO 65203

Chang, Chil K AN
1210 Danforth Dr.
Columbia, MO 65201

Chapman, Charles L IM
Boone Clinic Internal Med
500 Keene St.
Columbia, MO 65201
314-874-3300

Cheek, Chas W OPH
Columbia Eye Consultants
500 Keene St.
Columbia, MO 65201
314-449-3846

Churchill, Robert J DR
Dept of Rad UMHC
One Hospital Dr.
Columbia, MO 65212
314-882-1026

Clark, David P IM
Div Derm. M173 Hlth Sci Ctr.
One Hospital Drive
Columbia, MO 65212
314-882-3141

Cleary, Patrick A GS
Columbia Surgical Assoc Inc
3401 Berrywood Dr.#104
Columbia, MO 65201
314-443-8773

Colwill, Jack M FP
Rt 11 Countryshire Estates
Columbia, MO 65202

Conway, Robert R PMR
5R-01 Rusk Rehab Center
Columbia, MO 65212
314-882-3101

Cope, James C U
441 Lake Murex Circle
Sanibel, FL 33957

Couper, Nicholas B AN
Columbia Anes Assoc, Inc.
1506 E. Broadway St.
Columbia, MO 65201
314-449-1207

Croll, Gregory H PS
Div of PS UMHSC M349
1 Hospital Dr.
Columbia, MO 65212
314-882-2275

Crouch, John A CDS
1701 E. Broadway Suite 3
Columbia, MO 65201
314-876-1720

Crowley, Wm J N
Dept of Neurology
M741 HSC
Columbia, MO 65212
314-882-3133

---

*Doctor of osteopathy.

026 — BOONE

Cunningham, Milamari A AN
Cunningham Anesthesia
P. O. Box 1301
Columbia, MO 65205
314-442-2237

Cupp, Gerald V CD
401 Keene St.
Columbia, MO 65201
314-874-3300

Curry, Michael D PTH
2703 Clark Lane
P. O. Box 7406
Columbia, MO 65205
314-886-4600

Curtis, Jack J CDS
Cardiothoracic Surgery
MA312 Health Science Ct
Columbia, MO 65212
314-882-6954

Daly, James W OBG
N-617 Health Science Ctr
Dept. of OBG
Columbia, MO 65212
314-882-6361

Darnell, Thos F D
8C Oak Court
Branson, MO 65616
314-334-6230

Davis, Wm E OTO
Department of Otolaryngology
M583 Health Science Ctr
Columbia, MO 65212
314-882-8173

Dean, Francis D GP
309 S. Main St.
Fayette, MO 65248
816-248-2261

Delwood, Don M IM
Boone Clinic
500 Keene St.
Columbia, MO 65201
314-449-5933

Denninghoff, James S OTO
3401 Berrywood
Columbia, MO 65201
314-874-2192

Denninghoff, James C IM
1906 Vassar
Columbia, MO 65203
314-445-4237

DeSpain, John D D
M173 Health Sciences Ctr
Columbia, MO 65212
314-882-3141

Devkota, Jagadishwar DR
3212 Shoreside Drive
Columbia, MO 65203
816-665-7241

Dexheimer, Frank R GS
401 Keene
Columbia, MO 65201
314-874-3300

Dexter, James D N
Department of Neurology
M741 Health Science Ctr
Columbia, MO 65212
314-882-3133

Diaz-Arias, Alberto A PTH
117 Anderson
Columbia, MO 65203
314-882-1221

Diaz-Arias, Michele A IM
117 Anderson
Columbia, MO 65203
314-882-4141

Dick, Earl P
Harry S. Truman Mem Vet Hosp
800 Hospital Dr.
Columbia, MO 65201
314-443-2511

Dick, M. Marga P
Rt. 1, 11601 Andrew Sapp Rd
Ashland, MO 65010
314-449-5800

Ditmore, Q. Michael NS
10 North Garth
Columbia, MO 65201
314-449-3409

Dueker, David K OPH
EC-139 Mason Eye Institute
Health Science Ctr
Columbia, MO 65212
314-882-1027

Duong, Mo Hong PTH
Ellis Fischel State Cancer
115 Business Loop 70 W
Columbia, MO 65203
314-875-2100

Eckenrode, James F ORS
400 Keene St. P.O.Box O
Columbia, MO 65205
314-443-2402

Eggers, George W AN
Department of Anesthesiology
3N15 Health Science Ctr
Columbia, MO 65212
314-882-2568

Ellsasser, James C ORS
UMC Health Science Ctr M562
1 Hospital Drive
Columbia, MO 65212
314-882-3104

Estrem, Scott A OTO
MA314 Medical Science
1 Hospital Drive
Columbia, MO 65212
314-882-8173

Favazza, Armando R P
Department of Psychiatry
6 Health Science Ctr
Columbia, MO 65212
314-449-2511

Ferneau, James E OBG
401 Keene St
Columbia, MO 65201
314-874-3300

Ferrari, Herbert A AN
Department of Anesthesiology
3N15 Health Science Ctr
Columbia, MO 65212
314-882-8159

***Fisher, Robert B** AN
UMHSC Dept of Anes N314
1 Hosp Dr.
Columbia, MO 65212
314-882-2569

Foote, Jerry E D
1504 E Broadway
Columbia, MO 65201
314-442-3565

Frazier, Robt E P
113 W Broadway
Columbia, MO 65203
314-443-1508

Freeman, James A CD
Boone Clinic
401 Keene Street
Columbia, MO 65201
314-876-1630

Fuchs, Geo J GYN
201 W. Brandon Rd.
Columbia, MO 65203
314-882-7010

Gaines, Robert W ORS
M562 Health Sciences Ctr
1 Hospital Drive
Columbia, MO 65212
314-882-3106

Gainor, Barry J ORS
Department of Orthopaedics
M562 Health Science Ctr
Columbia, MO 65212
314-882-3104

Gaitonde, Mangesh R P
4393 Breezy Point
Lee's Summit, MO 64082

Garrett, Elizabeth A FP
Family & Community Med
MA228
Health Sciences Ctr
Columbia, MO 65212
314-882-0974

Garrotto, Lewis J DR
3100 Woodkirk Dr.
Columbia, MO 65203
314-449-3931

Gay, John W OBG
Dept of OBG Univ Hosp & Clin
One Hospital Drive
Columbia, MO 65212
314-882-7937

Georgi, Basil A GS
Dept of Surg Room NW301
1 Hosp Drive
Columbia, MO 65212
314-882-8178

Gerhardt, Donald C IM
401 Keene St.
Columbia, MO 65201
314-874-3300

Giangiacomo, Joseph OPH
EC-135 Mason Eye Institute
Health Sciences Ctr
Columbia, MO 65212
314-882-1027

Gibson, Merlyn D R
Columbia Radiology LTD
3401 Berrywood Ste 103
Columbia, MO 65201
314-449-3931

Goldstein, David E PD
Department of Child Health
M769 Health Science Ctr
Columbia, MO 65212
314-882-6979

Gordon, Bruce J AN
Columbia Anesthesia Assoc.
P. O. Box 7041
Columbia, MO 65205
314-449-1207

Griffin, Wm T OBG
Department of OB/GYN
N625 Health Science Ctr
Columbia, MO 65212
314-882-7937

Groshong, Ted D PD
Department of Child Health
MA204 Health Science Ct
Columbia, MO 65212
314-882-1566

***Guenthner, Brenda L** PM
5016 Westport Dr.
Jefferson City, MO 65109
314-882-3101

Gumerlock, Mary K NS
Dept of Surg Div of NeuroSur
UMHSC One Hospital Dr.
Columbia, MO 65212
314-882-4908

Gupta, Nilakshi AN
Univ of Mo Dept of Anes
N314 HSC
Columbia, MO 65212
314-882-2568

Gurucharri, Vincent P TS
3401 Berrywood
Suite 104
Columbia, MO 65201
314-443-8773

Guyer, Emily PD
102 Student Health Center
University of Missouri
Columbia, MO 65211
314-882-7481

Hall, David G OBG
Box 232, Roby Farm Road
Rocheport, MO 65279
314-698-4855

Harris, Hugh S GS
3401 Berrywood Dr.
Suite #104
Columbia, MO 65201
314-443-8773

Harris, Robt J PD
Boone Clinic
401 Keene St.
Columbia, MO 65201
314-876-1620

Harrison, Winston E U
1220 Sunset Dr
Columbia, MO 65203
314-443-0596

Havey, John ORS
201 West Broadway
Columbia, MO 65203
314-875-6109

Havey, Ann D PTH
112 Bingham Rd.
Columbia, MO 65203
314-882-8154

Haw, Marvin T GER
1999 Pounds Rd.
Festus, MO 63028
314-937-2958

Heimburger, Elizabeth M P
200 East Walnut Street
Columbia, MO 65203
314-875-5151

Heimburger, Richard A PS
1504 East Broadway Ste 217
Columbia, MO 65201
314-449-0508

Helikson, Mary A PDS
Dept. of Gen. Surg.
N307A Health Science Ct
Columbia, MO 65212
314-882-4156

Henzel, John H VS
1504 E. Broadway
Columbia, MO 65201
314-874-2158

Highland, Thomas R ORS
400 Keene St. P. O. Box O
Columbia, MO 65205
314-443-2402

Hofmeister, Roger W FP
Ellis Fischel Cancer Ctr
115 Business Loop 70 W
Columbia, MO 65203
314-875-2100

Holekamp, Timothy OPH
500 Keene St. Suite 102
Columbia, MO 65201
314-449-3846

Holmes, Richard A NM
1111 Lakeside Drive
Columbia, MO 65203
314-443-2511

Hoyt, Terry S DR
1237 Sunset Drive
Columbia, MO 65203
314-443-2511

---

*Doctor of osteopathy.

Hughes, Derek P
4104 W. Rollins Rd.
Columbia, MO 65203
314-876-8000

Humphrey, Loren J GS
M580 Health Sciences Ctr
Columbia, MO 65212
314-882-7942

Humphreys, Edward T GS
1123 Third St.
Boonville, MO 65233

Husain, S. Arshad CHP
2602 Johnson Drive
Columbia, MO 65203
314-882-8006

Ide, Carl H OPH
EC-138 Mason Eye Inst
Health Sciences Center
Columbia, MO 65212
314-882-1028

Irvin, William S IM
401 Keene Street
Columbia, MO 65201
314-874-3340

James, Elizabeth J PD
Department of Child Health
N723 Health Science Ctr
Columbia, MO 65212
314-882-7919

James, Ronald C END
610 W Blvd South
Columbia, MO 65203

Johnson, Richard E PTH
129 Lindell Drive
Columbia, MO 65203
314-442-7237

Judy, Joseph D IM
745 Church
Beloit, WI 53511

Kaplan, Michael F PS
Plastic & Reconstructive Sur
1701 E. Broadway
Columbia, MO 65201
314-876-1700

Keller, Barbara P AN
Dept of Anes UMHC
One Hospital Drive
Columbia, MO 65212
314-882-2568

Kennett, Jerry D CD
401 Keene St.
Columbia, MO 65201
314-876-1630

King, Robert J U
500 Keene St.
Columbia, MO 65201
314-449-6260

Klachko, David M IM
Cosmopolitan Diabetes Ctr
Health Science Ctr.
Columbia, MO 65212
314-882-2265

Knudson, Dennis R OTO
2100 Southwood Dr.
Columbia, MO 65201
314-874-3300

Koivunen, Debra G GS
Dept of Surg UMCHC NW301
1 Hospital Drive
Columbia, MO 65212
314-882-6137

Krechel, Susan W AN
Dept of Anes #3N15
Health Sciences Ctr
Columbia, MO 65212
314-882-2568

Ladenson, Roland P IM
704 Westmount Ave.
Columbia, MO 65203

Lamberti, Jos W P
Department of Psychiatry
6 Health Science Ctr.
Columbia, MO 65212
314-882-2511

Lampton, Lawrence M PUD
Doctor's Clinic Bldg.
1502 East Broadway
Columbia, MO 65201
314-874-3371

Landhuis, Leo R OPH
Eye Research Foundation
404 Portland St
Columbia, MO 65201
314-442-0017

Landreneau, Rodney J CDS
2705 Vail Drive
Columbia, MO 65203
314-882-6954

Landrum, Alice L AN
Dept of Anes
Health Sciences Center
Columbia, MO 65212
314-882-2568

Laramore, Rosemary P
3508 Bray Ave.
Columbia, MO 65203
314-751-2929

Lee, H. T. DR
1502 E. Broadway
Columbia, MO 65201
314-443-4591

Leech, Maurice P GP
920 W. Davis
Fayette, MO 65248
816-248-2261

Leeper, Sidlee W IM
10203 S. State Rt O
Rocheport, MO 65279
314-445-6569

Leeper, Claude K PTH
2016 Ivy Way
Columbia, MO 65203
314-445-3358

Lepkowski, Marek B U
2512 Vista View Terrace
Columbia, MO 65203
314-449-0570

Lepkowski, Hemlata K R
2512 Vista View Terrace
Columbia, MO 65203
816-449-3931

Lising, Alexander A PMR
1504 East Broadway Suite 117
Columbia, MO 65201
314-874-5080

Litton, Lynn O ORS
45 Compton Court
Prairie Village, KS 66208

Litwiller, Raymond W GP
2707 Estevan Ave. Apt 302
Victoria Brit. Columbia
Canada V8R2T5,

Llorens, Alfred S OBG
Department of OB/GYN
N607 Health Science Ctr
Columbia, MO 65212
314-882-1057

Loeppky, Carol B IM
113 W. Broadway
Columbia, MO 65203
314-449-0088

Logue, John T IM
912 Crestland Ave.
Columbia, MO 65203
314-449-5369

Lohmar, Roland E IM
113 W Broadway
Columbia, MO 65203
314-449-0088

Long, Edwin T CD
1415 Torrey Pines Drive
Columbia, MO 65203

Long, John W CDS
1701 E. Broadway Suite 3
Columbia, MO 65201
314-876-1720

Lucas, Luke W P
1506 E. Broadway #304
Columbia, MO 65201
314-874-4177

Marsan, Richard E DR
Radiology Dept UMHSC
One Hospital Dr.
Columbia, MO 65212
314-882-1026

Marshall, William G FP
Glasgow Medical Clinic
108 Market St.
Glasgow, MO 65254
816-338-2233

Martin, Chris J IM
1701 E. Broadway
Columbia, MO 65201
314-449-4999

Martin, Richard W PD
Boone Clinic
401 Keene St.
Columbia, MO 65201
314-874-3300

Matias, Delia A PD
1504 E. Broadway
Columbia, MO 65201
314-875-2505

McCord, E. Scott AN
Department of Anesthesiology
N315 Health Science Ctr
Columbia, MO 65212
314-882-2568

McDavid, Robert E OBG
Women's Health Associates
201 West Broadway
Columbia, MO 65203
314-443-8796

McElroy, Glenn L ORS
3416 Woodrail Terrace
Columbia, MO 65203
314-443-2402

McLaren, David L N
1701 E. Broadway
Columbia, MO 65201
314-449-3404

Mechlin, David C OTO
3401 Berrywood Dr. Ste. 301
Columbia, MO 65201
314-874-2192

Metzler, Michael H GS
Departmen of General Surgery
N307 Health Science Ctr
Columbia, MO 65212
314-882-8157

Miller, Leroy J FP
32 Bingham Rd.
Columbia, MO 65203

Millwee, Elizabeth M GP
108 E. Green Meadows #1
Columbia, MO 65203
314-449-2444

Mitchell, Lynn D IM
500 Keene
Columbia, MO 65201
314-876-1600

Mitchell, Franklin L GS
2200 Danforth Ct
Columbia, MO 65201
314-882-7956

Molina, Roy IM
401 Keene
Columbia, MO 65201
314-876-1600

Monaghan, Greg G HEM
Hematology-Oncology Assoc.
3401 Berrywood Ste 303
Columbia, MO 65201
314-874-7800

Monroe, C. Dean P
405 Bernadette Dr. Suite B
Columbia, MO 65203
314-445-2362

Morgan, W. Tom FP
2802 Butterfield Ct.
Columbia, MO 65203
314-874-0008

Morris, John J GP
P. O. Box 537
Columbia, MO 65205
314-874-3266

Mosby, Larry D PTH
107 E Brandon Rd
Columbia, MO 65203
314-886-4600

Mueller, Randall E FP
Emer Dept BHC
1600 E. Broadway
Columbia, MO 65212
314-875-3501

Murrell, H. Jerry TR
Boone Hospital Center
1600 E. Broadway
Columbia, MO 65201
314-875-3349

Muscato, Mary S HEM
607 Randy Lane
Columbia, MO 65201
314-874-7800

Muscato, Joseph J HEM
3401 Berrywood Dr.
Columbia, MO 65201
314-874-7800

Nanson, James D IM
1701 East Broadway
Columbia, MO 65201
314-449-4999

Nichols, W. Kirt GS
Dept of Surg.
N303 Health Science Ctr
Columbia, MO 65212
314-882-7136

Nierling, Dean A EM
Emergency Center
Univ Hospitals & Clinic
Columbia, MO 65212
314-882-8091

Nieuwenhuizen, Maarten P
3916 Faurot Dr
Columbia, MO 65203

Nolph, Georgia J FP
3217 S. Providence Rd.
Columbia, MO 65203
314-882-2163

Nolph, Karl D NEP
Dept of Med
MA436 Health Science Ct
Columbia, MO 65212
314-882-7991

Oro, John J NS
Department of Neurosurgery
N522 Health Science Ctr
Columbia, MO 65212
314-882-4908

Orth, O. Gerald NS
10 North Garth St.
Columbia, MO 65203
314-449-3407

Parker, Brent M CD
703 Huntridge Drive
Columbia, MO 65201
314-882-2284

---

*Doctor of osteopathy.

Patterson, Donald C GYN
500 Keene St. Suite 206
Columbia, MO 65201
314-442-2221

Payne, John W ORS
Route 5
Fulton, MO 65251
314-642-4234

Payne, David E D
401 Keene St.
Columbia, MO 65201

Penney, Larry L OBG
2412 Cimarron Dr.
Columbia, MO 65203
314-882-7938

Perry, Michael C ONC
Department of Medicine
MA406C Hlth Science Ctr
Columbia, MO 65212
314-882-4979

Peters, Walter R GS
Columbia Surgical Assoc.
3401 Berrywood #104
Columbia, MO 65201
314-443-8773

Petersen, Michael T AN
Anesthesiology Inc.
P. O. Box 975
Columbia, MO 65202
314-449-6405

Pfefer, Leland U IM
1502 E Broadway
Columbia, MO 65201
314-449-1261

Phillips, Stephen W DR
1502 E. Broadway
Columbia, MO 65201
314-443-4591

Pickard, Clarence M IM
203 W Broadway
Columbia, MO 65203
314-449-4101

Pingelton, William B GYN
113 W Broadway
Columbia, MO 65203
314-449-5766

Pittman, David L PTH
2703 Clark Lane
P. O. Box 7406
Columbia, MO 65205
314-886-4600

Politte, Lenard L CD
401 Keene St
Columbia, MO 65201
314-876-1630

Price, George FP
Family Health Care
1506 E. Broadway
Columbia, MO 65201
314-449-0808

Puckett, Charles L PS
Department of Plastic Surg
M349 Health Science Ctr
Columbia, MO 65212
314-882-2275

Rall, Kenneth L R
16112 East 28th Terrace
Independence, MO 64055
816-861-4700

***Ray, Terry L** AN
1506 E. Broadway
P.O. Box 7041
Columbia, MO 65205
314-449-1207

Renner, Gregory J OTO
Dept Of Oto.
MA314 Health Science Ct
Columbia, MO 65212
314-882-8173

Ridenhour, E. Gene GS
Route 13 Cedar Grove
Columbia, MO 65201
314-874-3111

Rikli, Arthur E GPM
4003 Faurot Dr
Columbia, MO 65203

Rodgers, Dorothy L GYN
Student Health Center
Univ of MO-Col
Columbia, MO 65211
314-882-7485

Roller, James A D
3401 Berrywood
Columbia, MO 65201
314-875-1527

Ross, Gilbert U
Dept. of Urology
N510 Health Science Ctr
Columbia, MO 65212
314-882-0494

Russell, Garth S ORS
400 Keene St. P.O.Box O
Columbia, MO 65205
314-443-2402

Sadhu, Vijay K DR
1502 E. Broadway
Columbia, MO 65201
314-443-4591

Sanders, Harold L DR
1502 E Broadway
Columbia, MO 65201

Schell, James A IM
3401 Berrywood Dr.
Columbia, MO 65201
314-442-3169

Schewe, Elmer J GS
1232 Sunset Dr.
Columbia, MO 65203
314-442-1272

Schlossman, David M IM
Hematology-Oncology Assoc
3401 Berrywood Ste 303
Columbia, MO 65201
314-874-7800

Schoengarth, Lowell D OPH
Columbia Eye Consultants
500 Keene St.
Columbia, MO 65201
314-449-3846

See, William M CD
1701 E. Broadway
Columbia, MO 65201
314-876-1720

Shah, Jayendra H END
VA Hospital Med Svc
800 Hospital Dr.
Columbia, MO 65201
314-443-2511

Shapero, James A P
1701 East Broadway
Columbia, MO 65201
314-876-1740

Sher, Allyn L N
Neurology INC.
500 Keene St.
Columbia, MO 65201
314-449-2141

Silver, Donald VS
Department of General Surg
M580 Health Science Ctr
Columbia, MO 65212
314-882-8178

Skibba, Joseph L GS
Ellis Fischel St Cancer Ctr
115 Business Loop 70
Columbia, MO 65203
314-875-2214

Smith, J. Ned IM
Department Of Medicine
M463 Health Science Ctr
Columbia, MO 65212
314-443-2511

Smith, Patrick A ORS
400 Keene St. P.O.Box O
Columbia, MO 65205
314-443-2402

Soha, Joseph J DR
114 Arbor Drive
Columbia, MO 65201
314-449-3931

Solomon, George D FP
427 N. Cedar Lake Dr.
Columbia, MO 65203
314-874-0008

Soltys, Stephen M P
Mid-Missouri Mental Health
3 Hospital Drive
Columbia, MO 65201
314-449-2511

Sosebee, Lee A ORS
2709 Malibu Court
Columbia, MO 65203
314-445-4715

Southwick, Christopher L AN
Columbia Anesthesia Assoc
1506 E. Broadway
Columbia, MO 65201
314-449-1207

Sowash, James J OBG
Dept of OB/GYN
Health Science Ctr
Columbia, MO 65212
314-882-7937

Spurgeon, Milo J AN
404 Edgewood Ave.
Columbia, MO 65203
314-442-2980

Standiford, Steven B GS1
Ellis Fischel Dept of Surg
115 Business Loop 70 W.
Columbia, MO 65203
314-875-2214

Stephenson, Hugh E TS
Department of Surgery
N323 Health Science Ctr
Columbia, MO 65212
314-882-7155

Stoy, Robt P GS
201 West Broadway
Columbia, MO 65203
314-449-3159

Stradford, H. Todd ORS
1444 S El Chaparral Ave
Columbia, MO 65201

Stuart, Byron M IM
910 Shamrock Terrace
Boonville, MO 65233
816-882-5679

Swaney, Charles M DR
1502 E. Broadway
Columbia, MO 65201
314-443-4591

Swinfard, Ronald W D
Dept of IM M173 Univ of MO
Columbia, MO 65212
314-882-3141

Szewczyk, Michael J EM
Boone Hospital Emerg Dept
1600 E. Broadway
Columbia, MO 65201
314-875-3501

Templer, Jerry W OTO
Division of Otolaryngology
MA314Health Science Ctr
Columbia, MO 65212
314-882-8173

Terry, Boyd E GS
Department of Surgery
N306 Health Science Ctr
Columbia, MO 65212
314-882-7156

Thomas, Robert M OTO
400 Keene St.
Columbia, MO 65201
314-449-0516

Thomas, Horace E GS
503 Russell Blvd.
Columbia, MO 65203
314-445-5219

Tinsley, John C IM
104 S. Glenwood
Columbia, MO 65203

Trammell, Lee W OBG
Women's Health Associates
201 West Broadway
Columbia, MO 65203
314-443-8796

Trecha, Randal R ORS
Col Ortho Group
400 Keene St. POBox O
Columbia, MO 65205
314-443-2402

Van Voorn, Catherine M IM
203 W. Broadway
Columbia, MO 65203
314-449-1227

Vogel, Curt M VS
3401 Berrywood
Columbia, MO 65201
314-443-8773

Waggoner, Chas M R
712 Hilltop Dr.
Columbia, MO 65201

Walls, Joseph T CDS
Department of Thoracic Surg
MA312Health Science Ctr
Columbia, MO 65212
314-882-6954

Walters, Laura D
1027 Hickory Hill Dr.
Columbia, MO 65203
314-449-1266

Watson, Trevor F GYN
1504 E Broadway
Columbia, MO 65201
314-443-4511

Watts, Clark NS
Department of Neurosurgery
N522 Health Science Ctr
Columbia, MO 65212
314-882-4908

***Weaver, Bruce E** AN
1506 E. Broadway
P.O. Box 7041
Columbia, MO 65205
314-449-1207

Weaver, Dana J US
Department of Urology
N510 Health Science Ctr
Columbia, MO 65212
314-882-1151

Weaver, Mark E AN
Anesthesiologists, Inc.
P. O. Box 975
Columbia, MO 65205

Weinstein, Stephen H US
Department of Urology
N510 Health Science Ctr
Columbia, MO 65212
314-882-1151

Weiss, James M P
Department of Psychiatry
C-6 Health Science Ctr
Columbia, MO 65212
314-882-3176

---

*Doctor of osteopathy.

Welsh, Clinton F PS
UMHSC Div of Plastic Surgery
M349 One Hospital Dr.
Columbia, MO 65212
314-882-2275

Westgate, Steven J TR
c/o Boone Hospital Center
1600 East Broadway
Columbia, MO 65201
314-875-3349

Weston, Kenneth G FP
Family Health Care
1506 East Broadway
Columbia, MO 65201
314-449-0808

White, Harry H N
Dept of Neurology HSC
Columbia, MO 65212
314-443-2511

Williams, Fred OBG
201 W Broadway
Columbia, MO 65203
314-443-8796

Wilson, Geo P R
918 Westwinds Drive
Columbia, MO 65203
314-449-6254

Windmiller, M. Eugene GS
1502 E Broadway
Columbia, MO 65201
314-449-5684

Winkelmeyer, William K NEP
1701 E Broadway
Columbia, MO 65201
314-876-1735

Winn, Geo W GS
607 Poplar
Boonville, MO 65233
816-882-6218

Winnacker, John L IM
Department of Medicine
C326 VA Hospital
Columbia, MO 65201
314-443-2511

Witten, David M R
Rt 3
Columbia, MO 65203
314-882-8183

Worth, Eugene R AN
Univ of MO Dept of Anes
N314 HSC
Columbia, MO 65212
314-882-2568

Xavier, Ravi AN
P.O.Box 975
Columbia, MO 65205
314-449-6280

Yang, H. Kell OPH
203 W. Broadway
Columbia, MO 65203
314-874-1616

Zacharias, Kulangara P GS
RR 11 Countryshire Box 331
Columbia, MO 65202
314-642-3311

Zurowski, Susan M D
Div of Derm M173 Health Sci
One Hospital Drive
Columbia, MO 65212
314-882-3141

030 — BUCHANAN

Acuff, Robert P R
5325 Faraon St.
St Joseph, MO 64506
816-271-6460

Alderson, Thomas W FP
3306 Mitchell
St. Joseph, MO 64507
816-279-3506

Ames, William H IM
2318 Lovers Lane
St. Joseph, MO 64506

Andres, Edward H GS
1314 N. 36
St Joseph, MO 64506
816-233-3337

***Baade, Norman F** AN
NW MO Anes Service
2400 Frederick
St. Joseph, MO 64506
816-232-2829

Balfour, H. Brian TR
1321 Village Drive
St. Joseph, MO 64506
816-364-6461

Ballard, Dewey P IM
5301 Faraon St.
St Joseph, MO 64506
816-233-9711

Bartulica, Nicholas P
3400 Frederick
St Joseph, MO 64502
816-232-8431

Beck, Paul M OPH
620 Francis
Kirkpatrick Building
St Joseph, MO 64501
816-233-2297

Beheler, Edward M GS
P. O. Box 758
St. Joseph, MO 64501
816-232-8444

Benson, Scott C FP
4626 East Carmel
Mesa, AZ 65806

Berger, William L GE
3921 Sherman
St. Joseph, MO 64506
816-233-8724

Berkowitz, Ellis R IM
3715 Beck Rd. Bldg F
St. Joseph, MO 64506
816-279-6376

***Bowers, James L** FP
1301 Buchanan Ave.
St. Joseph, MO 64501
816-232-4242

Bradley, J. Douglas FP
1314 N. 36
St. Joseph, MO 64506
816-233-7377

Brennan, Richard J ORS
5301 Faraon #210
St. Joseph, MO 64506
816-232-1888

Bristow, Robert B U
1610 Ashland
St. Joseph, MO 64506

Brown, Merlin D FP
1314 N 36
St Joseph, MO 64506
816-233-7377

Burnett, Dak R IM
5301 Faraon St.
St. Joseph, MO 64506
816-233-9711

Butler, Elza F OM
3110 Douglas St.
St Joseph, MO 64506
816-233-1656

Carpenter, Geo T IM
5301 Faraon St.
St Joseph, MO 64506
816-233-9711

Christ, Martin H A
1402 Faraon St
St Joseph, MO 64501
816-279-1615

Christiansen, Sidney G OTO
5301 Faraon St.
St. Joseph, MO 64506
816-364-3277

Clark, Robert C IM
900 N. Belt
St. Joseph, MO 64506
816-233-9053

Conant, James F GP
702 Jules Street
P.O. Box 262
St. Joseph, MO 64502
816-232-4222

Conroy, James A P
Woodson Psychiatric Hospital
P. O. Box 263
St. Joseph, MO 64502
816-232-8431

Corder, Robt L OBG
1322 N. 36
St Joseph, MO 64506
816-233-5139

Cox, John P P
P. O. Box 263
St. Joseph, MO 64502
816-232-2224

Craig, Richard O GS
2015 N. 36th
Beck Road Center
St Joseph, MO 64506
816-232-5113

Crie, J. Stanley IM
Heartland Cardiology Ctr
5325 Faraon
St. Joseph, MO 64506
816-279-6666

Decanini, Mario P
P O Box 11
St Joseph, MO 64502
816-232-8431

DePriest, Michael D PS
P. O. Box 8337
St. Joseph, MO 64508

Dudik, Randall G GP
1301 S. Belt
St. Joseph, MO 64507
816-232-2525

DuMont, Clement C FP
1905 Francis St
St Joseph, MO 64501
816-232-5776

Dunlap, Michael D EM
504 N. Leonard Rd.
St. Joseph, MO 64506
816-232-5913

Dyer, Gary A D
1325 Village Dr
St Joseph, MO 64506
816-364-1507

Fernandez, Fernando PD
1341 Village Dr
St Joseph, MO 64506
816-364-5974

Fisher, Jos L R
702 Jules St.
St Joseph, MO 64501
816-233-8211

Fox, Gerald E PTH
2106 Lovers Lane
St Joseph, MO 64505

Gaffney, Jon W PS
1005 "B" West St Maartens Dr
St. Joseph, MO 64506
816-364-3113

Garrison, David L OBG
1502 N. 36th
St Joseph, MO 64506
816-232-0654

Goeking, C Keith OBG
1502 N. 36th Street
St. Joseph, MO 64506
816-232-0654

Gondring, William H ORS
1335 Village Dr
St Joseph, MO 64506
816-233-0211

Grimes, Manning E FP
815 N. Noyes Blvd
St Joseph, MO 64506

Gunter, Joe S U
1322 N 36th Street
St Joseph, MO 64506
816-232-6315

Harner, Casper G D
904 Edmond St
St Joseph, MO 64501
816-233-7702

Hayes, Paul W P
610 N Noyes Blvd
St Joseph, MO 64506
816-233-4950

Heins, Donald E R
617 Tanglewood
St. Joseph, MO 64506
816-271-7557

Hindupur, Mohan R CD
1417 Village Drive
St. Joseph, MO 64506

Hughes, Judson M OM
3306 Jennifer Lane
St Joseph, MO 64506
816-279-3823

Humphreys, William ORS
5301 Faraon Suite 210
St. Joseph, MO 64506
816-232-1888

Ide, Lucien W IM
1416 N. 25th
St Joseph, MO 64506
816-279-9990

Inocencio, Eddie C OTO
1419 Village Dr.
St Joseph, MO 64506
816-232-0053

***Irinyi, Elmer T** GP
313 So 169 Hwy
Gower, MO 64454
816-424-6471

***Jacks, Richard K** P
P. O. Box 263
St. Joseph, MO 64502
816-232-8431

Jarvis, Stephen P P
1802 Union St. Square
St. Joseph, MO 64501
816-364-2021

Kanmanthreddy, Vijaya P
1009 W. St. Maartens Ste A
St. Joseph, MO 64506
816-233-2299

Kelty, Maureen A OBG
1502 N. 36th
St. Joseph, MO 64506
816-232-0654

Kiekhaefer, Theodore C FP
1301 S. Belt
St. Joseph, MO 64507
816-232-2525

King, Dana M OTO
5301 Faraon Suite 160
St. Joseph, MO 64506
816-364-3277

---

*Doctor of osteopathy.

Kline, Carlyn M FP
17 Stonecrest
St Joseph, MO 64506
816-279-3506

Kline, Edmund W OBG
1322 N 36
St Joseph, MO 64506
816-233-5139

Knepper, Paul A GS
902 Edmond
St Joseph, MO 64501
816-364-2588

Kozminski, Mike U
1322 North 36th St.
St. Joseph, MO 64506
816-232-6315

LacKamp, Robert J R
702 Jule St.
St. Joseph, MO 64501
816-233-8211

Laningham, Susan L IM
5301 Faraon St.
St. Joseph, MO 64506
816-233-9711

Llana, Angelo A IM
900 N. Belt
St. Joseph, MO 64506
816-233-7238

Lockard, Orlyn O IM
3921 Sherman
St. Joseph, MO 64506
816-233-8724

Makos, Mignon M N
510 Francis
St. Joseph, MO 64501
816-364-3834

Marston, F. James OBG
1502 North 36th St.
St Joseph, MO 64506
816-232-0654

Martin, John N U
#9 Lindenwood
St Joseph, MO 64505

Maxwell, Sarz P
510 Francis
St. Joseph, MO 64501
816-582-3139

McDaniel, John R GS
1808 N 29th St.
St Joseph, MO 64507
816-279-7206

McDonald, Wilbur P GS
#6 Country Club Road
St Joseph, MO 64505
816-232-1719

McDonald, Wallace IM
305 North 8th
St Joseph, MO 64505
816-233-9027

***McLaughlin, Dan A** AN
N.W. Anesthesia Services
2400 Frederick Ave.
St. Joseph, MO 64506
816-232-3003

McMillen, James J IM
900 N Belt Highway
St Joseph, MO 64506
816-233-9053

***Mears, Gregory H** FP
P. O. Box 96 103 W. Main
Highland, KS 66035
913-442-3213

Megibow, Alan D CHP
1802 Union St. Square
St. Joseph, MO 64501
816-279-0789

Miller, William D FP
1314 N. 36th
St. Joseph, MO 64506
816-233-7377

Moeller, Randall J U
1322 N 36th Street
St. Joseph, MO 64506

Moranville, Benedict A EM
4814 Stonecrest Terrace
St. Joseph, MO 64506
816-271-7111

Morse, John P ORS
315 N. 10th St.
St. Joseph, MO 64501
816-232-9140

Mothershead, John L FP
2603 Frederick Ave
St. Joseph, MO 64506
816-233-1212

Moya, Carlos E PTH
Heartland Hospital West
801 Faraon St.
St. Joseph, MO 64501
816-271-7901

Mujica, Patricio H NS
3109 Frederick Ave Ste B
St. Joseph, MO 64506

Mulder, George D GS
1314 North 36th St.
St. Joseph, MO 64501
816-233-3337

Mullican, Charles N IM
3715 Beck Rd. Bldg F.
St Joseph, MO 64506
816-279-6376

Murphy, James A OPH
3201 Ashland Ave.
St Joseph, MO 64506
816-279-3937

Nguyen, Helen T A
P. O. Box 8294
St. Joseph, MO 64508
816-279-1113

Partamian, Krikor O U
1322 N 36th
St Joseph, MO 64506
816-232-6315

Patel, Raman J EM
904 Edmond
St. Joseph, MO 64506
816-233-7955

Patel, Bipin T AN
2400 Frederick Suite 111A
St. Joseph, MO 64506
816-232-3003

Patel, Prakesh B IM
1011 A St. Maartens Dr.
St. Joseph, MO 64506
816-232-0185

Paulson, Gordon S IM
1820 Ashland Avenue
St Joseph, MO 64506
816-233-1361

Pifer, Lawrence H FP
925 Fifth Ave
St Joseph, MO 64505
816-232-1333

Potter, Caryl A IM
2320 Northeast Parkway
St. Joseph, MO 64506
816-232-4934

Prokop, Joseph R PD
1345 Village Dr.
St. Joseph, MO 64506
816-232-4100

Rangineni, Rajagopal IM
1011 E. St. Maartens Dr. #B
St. Joseph, MO 64506
816-232-0645

Redmond, William S FP
3102 Jules
St. Joseph, MO 64501

Remis, Robert E U
1322 North 36th
St. Joseph, MO 64506
816-232-6315

Rippe, William F IM
5301 Faraon St.
St. Joseph, MO 64506
816-233-9711

Roberts, Phyllis G PD
1429 Village Drive
St Joseph, MO 64506
816-233-5491

Rogers, John T GS
2505 N. 29
St Joseph, MO 64506
816-279-2208

Sabahi, Houman DR
5325 Faraon St.
St. Joseph, MO 64501
816-271-6460

Sandberg, Chris B FP
1314 North 36th St.
St. Joseph, MO 64506
816-233-7377

Schaaf, Robert O
313 South 169 Highway
Gower, MO 64454
816-424-6471

Sealby, Robert L FP
904 Edmond St.
St. Joseph, MO 64501
816-233-7702

Shah, Narendra AN
N.W. Mo. Anesthesia Services
2400 Frederick Suite111
St. Joseph, MO 64506
816-232-3003

Shah, Sheila PTH
Heartland Hospital East
5325 Faraon St.
St. Joseph, MO 64506
816-271-6170

Shevlin, Chas F PD
1635C La Reina Way
Palm Springs, CA 92262

Silliman, York E PTH
Heartland Hsopital East
5325 Faraon St.
St Joseph, MO 64506
816-271-6170

Sklenar, Donald E FP
228 Illinois
St. Joseph, MO 64504
816-238-4016

Smith, Bruce D ORS
1335 Village Dr.
St. Joseph, MO 64506
816-233-0211

***Smith, Cyrus D** ORS
3107 Frederick
St. Joseph, MO 64506
816-233-9888

Sollars, Eric G IM
900 North Belt
St. Joseph, MO 64506

Sprague, Gita IM
5301 Faraon
St. Joseph, MO 64506

Spurgat, Robert M IM
3715 Beck Rd. Bldg F
St. Joseph, MO 64506
816-279-6376

Stallard, Donald J IM
5301 Faraon
St Joseph, MO 64506
816-233-9711

Stevens, Edward M DR
Heartland Hospital West
801 Faraon St.
St. Joseph, MO 64501
816-271-7557

Stokes, Douglas L ORS
3107 Frederick Ave.
St. Joseph, MO 64506
816-233-9888

Stuber, Robert R IM
900 N Belt Hwy
St Joseph, MO 64506
816-233-9053

Taege, Alan J IM
5301 Faraon
St. Joseph, MO 64506
816-233-9711

Thompson, F Gregg PD
2714 Ashland Ave
St Joseph, MO 64506
816-364-5974

Tobin, Robert F OPH
1407 Village Dr.
St Joseph, MO 64506
816-279-1363

Valera, Salvador S P
3400 Frederick
St. Joseph, MO 64506
816-233-8431

Wadlow, Ernest E OBG
1401 N. 43rd St.
St. Joseph, MO 64506

Waggoner, Sharon E FP
301 Illinois
St. Joseph, MO 64504
816-238-4544

Walsh, Richard J D
3917 Sherman
St. Joseph, MO 64506
816-364-6777

Watts, Larry K OBG
1322 N. 36th St.
St. Joseph, MO 64506

Weigand, Robert T HEM
1011-B E. St. Maartens Dr.
St. Joseph, MO 64506
816-232-0645

Weinand, Ernest E GS
1314 N. 36th St.
St Joseph, MO 64506
816-233-3337

Whitehead, Clay C F
1014 W. St. Maartens Dr.
St. Joseph, MO 64506
816-271-6570

Whitsell, O. Earl OPH
2306 Sacramento
St Joseph, MO 64507
816-279-2363

***Williams, Robert J** F
P. O. Box 8006
St. Joseph, MO 64508
816-232-8431

Willman, Charles R G
2216 Highly
St Joseph, MO 64506
816-232-4447

Willumsen, Henry C OBC
702 N. 25th St. #4
St. Joseph, MO 64506

Windsor, David G F
RR 1
Rosendale, MO 64483
816-232-5246

Woehl, Joseph J N
3920 Sherman
St. Joseph, MO 64506
816-756-0997

---

*Doctor of osteopathy.

030 — BUCHANAN

Wolanski, Eugene G IM
5301 Faraon
St Joseph, MO 64506
816-233-9711

Young, Thomas J OPH
3201 Ashland Ave
St Joseph, MO 64506
816-279-3937

34 — B-W-R-C

Aldridge, George A U
1901 Sunset
Poplar Bluff, MO 63901
314-686-4139

Barbour, Marvin R FP
Kneibert Clinic
Poplar Bluff, MO 63901
314-686-2411

Baskurt, Mehmet V R
VA Hospital Dept of Rad
Poplar Bluff, MO 63901
314-686-4151

Bhothinard, Bhisit N
P. O. Box 4027
Poplar Bluff, MO 63901
314-686-1135

Biggs, Fred J GP
12 Los Amigos
Harlingen, TX 78552

Brookreson, Alton D FP
1901 Sunset Drive
Poplar Bluff, MO 63901
314-686-4133

Caldwell, Fred FP
1901 Sunset Drive
Poplar Bluff, MO 63901
314-785-0828

Camp, Richard V FP
P.O. Box 158
Poplar Bluff, MO 63901

Chand, Nazar PD
666 Lester
Poplar Bluff, MO 63901
314-686-2411

Christy, John P GS
666 Lester St
Poplar Bluff, MO 63901
314-686-2411

Chung, T. David GS
930 N. Westwood Blvd.
Poplar Bluff, MO 63901
314-686-6061

Costin, Jimmy L PTH
P.O. Box 4175
Poplar Bluff, MO 63901
314-686-2488

Dell, Robert V DR
P. O. Box 3932
Poplar Bluff, MO 63901
314-785-0125

Dennison, Bruce F OTO
2503 Lucy Lee Parkway
Poplar Bluff, MO 63901
314-785-5544

Dever, Robert L DR
P.O.Box 3932
Poplar Bluff, MO 63901
314-785-7721

Elliott, Wendell H FP
Kneibert Clinic
686 Lester
Poplar Bluff, MO 63901
314-686-2411

Engelhardt, Robt C AN
Kneibert Clinic
Poplar Bluff, MO 63901
314-686-2411

Fraser, Richard A IM
Kneibert Clinic Bldg
686 Lester St.
Poplar Bluff, MO 63901
314-686-2411

***Gayle, Richard E** GP
415 S. Main
Piedmont, MO 63957
314-223-4233

***Gayle, David R** GP
415 S. Main
Piedmont, MO 63957
314-223-4233

Gernstetter, S L ORS
P O Box 337
Poplar Bluff, MO 63901
314-785-2243

Gieselmann, James W GS
1901 Sunset
Poplar Bluff, MO 63901
314-686-2446

Gujarati, Subhash B R
Lucy Lee Hospital
Poplar Bluff, MO 63901
314-785-6380

Hansbrough, Eugene T GS
1502 Lurlyn
Poplar Bluff, MO 63901
314-686-2411

Hecker, Jos E FP
Kneibert Clinic
Poplar Bluff, MO 63901
314-686-2411

Hoja, W Alex OBG
1901 Sunset
Northwest Medical Ctr
Poplar Bluff, MO 63901
314-785-7731

Hunt, John L GP
3600 Wilcox Rd.
Poplar Bluff, MO 63901
314-222-3556

Kim, Chul IM
1919 Big Bend Road
P.O. Box 3908
Poplar Bluff, MO 63901
314-686-7223

Laatsch, Robt H FP
1333 Meadow Ln
Poplar Bluff, MO 63901
314-686-6041

Leroux, Gene H FP
204 Summit
Doniphan, MO 63935
314-996-2136

Levenson, Ina D
1901 Sunset
Poplar Bluff, MO 63901
314-646-2666

Levenson, Ernest OPH
1901 Sunset Drive
Poplar Bluff, MO 63901
314-646-2666

Loughead, John R OTO
1201 Lurlyn Ave
Poplar Bluff, MO 63901

Madduri, Aruna D OBG
666 Lester
Poplar Bluff, MO 63901
314-686-2411

Madduri, Sivaprasad D U
666 Lester
Poplar Bluff, MO 63901
314-686-2411

May, Albert L GS
445 N 11th St.
Poplar Bluff, MO 63901
314-686-6041

McGath, Rickey L FP
P. O. Box 220
686 Lester
Poplar Bluff, MO 63901
314-686-2411

Moranz, John W ENT
Jct.D,Hwy 60
Van Buren, MO 63965
314-323-4211

Nagy, Al L P
Rt. 1
Poplar Bluff, MO 63901
314-785-7941

Parker, Arthur C PD
5232 Beach Dr. E. Gulf Pines
Destin, FL 32541
314-686-2411

Patty, Carl F OBG
1901 Sunset
Poplar Bluff, MO 63901
314-686-4133

Peick, Ann C GS
Kneibert Clinic 686 Lester
POBox 0220
Poplar Bluff, MO 63901

Phanijphand, Suwan OTO
2011 Northwestwood
Poplar Bluff, MO 63901
314-785-7791

Ponder, Terry B FP
10 Oak Tree Village
Doniphan, MO 63935
314-996-7771

Ramirez, Ricardo M PTH
Kneibert Clinic
Poplar Bluff, MO 63901
314-686-2411

Reddy, Abbiah N U
666 Lester St
Poplar Bluff, MO 63901
314-686-2411

Robertson, Wm D GP
Kniebert Clinic
636 Lester
Poplar Bluff, MO 63901
314-686-2411

Ruff, T E U
1411 Rosedale
Poplar Bluff, MO 63901

Samuel, George P IM
#1 Hospital Dr.
Doniphan, MO 63935
314-996-7148

Suvan, R PD
2501 Lucy Lee Parkway
Poplar Bluff, MO 63901
314-686-6041

Till, Bennie N FP
666 Lester St
Poplar Bluff, MO 63901
314-686-2411

Traxel, Wm L OPH
623 Pine Blvd
Poplar Bluff, MO 63901
314-686-2411

Turner, Kirby L FP
686 Lester St.
Poplar Bluff, MO 63901
314-686-2411

Varma, Devendra K IM
1381 Susan Dr.
Poplar Bluff, MO 63901
314-785-7708

Welke, Gordon A ORS
2509 Lucy Lee Parkway
Poplar Bluff, MO 63901
314-785-0133

White, Barry B FP
Puxico Clinic MD Inc
Puxico, MO 63960
314-222-3556

Wood, Thos O FP
2008 Schweitzer
Poplar Bluff, MO 63901
314-686-2411

038 — CALLAWAY

Benitez, Jose A OBG
20 South Hospital Drive
Fulton, MO 65251
314-642-1725

Brown, Katherine S AN
1304 Vine St
Fulton, MO 65251

Cooper, Thomas J FP
820 Jefferson
Fulton, MO 65251
314-642-6691

Cravens, William P FP
820 Jefferson
Fulton, MO 65251
314-642-6691

Gish, E R GP
5 E 5th St
Fulton, MO 65251
314-642-5350

Groce, Geo D FP
820 Jefferson St
Fulton, MO 65251
314-642-6691

Ivins, Gregory K GS
26 South Hospital Drive
Fulton, MO 65251
314-642-0115

Jackson, Vernon B OPH
206 E. 9th St.
Fulton, MO 65251
314-642-3311

Nichols, David A IM
Callaway Physicians
110 N. Hospital Dr.
Fulton, MO 65251
314-642-5911

Osbourn, Richard A FP
3 Gross Place
Fulton, MO 65251
314-642-6621

Parulekar, Dilip G GS
820 Jefferson
Fulton, MO 65251
314-642-8505

Spencer, Donald C FP
110 N. Hospital Drive
Fulton, MO 65251
314-642-5911

042 — CAPE GIRARDEAU

Adams, Riley R AN
P.O. Box 751
721 N. Sunset Blvd.
Cape Girardeau, MO 63701
314-335-0185

***Asher, Kennett D** FP
545 Broadridge Rd.
Jackson, MO 63755
314-243-8408

Aydt, Sarah A IM
#14 Doctors Park
Cape Girardeau, MO 63701
314-334-9641

Bahn, Charles F GE
235 Long Branch East
Prescott, AZ 86303

---

*Doctor of osteopathy.

042 — CAPE GIRARDEAU

Bassett, Gary L P
P. O. Box 779
35 Doctors Park
Cape Girardeau, MO 63701
314-334-2570

Blankenship, Dale M FP
2 Coggeshall Ct.
Savannah, GA 31411

Bowman, W. Kirk CD
14 Doctors Park
Cape Girardeau, MO 63701
314-334-9641

Braxton, Frank W NEP
14 Doctor's Park
Cape Girardeau, MO 63701
314-334-9641

Brown, Henry (Hal) S D
60 Doctors Park
Cape Girardeau, MO 63701
314-334-8500

Brown, Mike J DR
4 DuMaine
Cape Girardeau, MO 63701
314-335-6671

Burcham, Tom R FP
P. O. Box 868
Farmington, MO 63640
314-335-1251

Burford, Edwin K FP
2424 Terry Hill
Cape Girardeau, MO 63701
314-335-1251

Campbell, Edward D CRS
1100 N. Henderson
Cape Girardeau, MO 63701
314-335-8725

Campbell, William S R
36 Doctors' Park
Cape Girardeau, MO 63701
314-335-6671

Catron, David O FP
60 Doctors' Park
Cape Girardeau, MO 63701
314-334-0511

Chapman, James B CD
25 Doctors Park
Cape Girardeau, MO 63701
314-334-6008

Chapman, Jean A A
35 Doctors Park
Cape Girardeau, MO 63701
314-335-1218

Chaudhari, A. Basit NS
66 Doctors Park
Cape Girardeau, MO 63701
314-334-7175

Clark, David J GS
Surgical Clinic
10 Doctors Park
Cape Girardeau, MO 63701
314-334-3074

Coleman, Matthew J GE
21 Doctors Park
Cape Girardeau, MO 63701
314-334-8870

Coulson, Forest H IM
Route 1, Box 154
Whitewater, MO 63785
314-243-8677

Cozean, Charles H OPH
56 Doctors Park
Cape Girardeau, MO 63701
314-334-4401

Crist, Charles L FP
#60 Doctors' Park
Cape Girardeau, MO 63701
314-334-0511

Crist, Roderic C EM
822 Alta Vista
Cape Girardeau, MO 63701
314-334-4822

Cupples, Tommy E DR
c/o Cape Radiology Group,Inc
P.O. Box 1330
Cape Girardeau, MO 63701
314-335-6671

DeFelice, Charles E IM
14 Doctors Park
Cape Girardeau, MO 63701
314-334-9641

Dinkins, James A PD
23 Doctors Park
Cape Girardeau, MO 63701
314-334-7796

Downey, Jon P FP
60 Doctors Park
Cape Girardeau, MO 63701
314-334-0511

Dzur, James R IM
53 Doctors Park
Cape Girardeau, MO 63701
314-334-2495

Eller, Gordon W ORS
48 Doctors Park
Cape Girardeau, MO 63701
314-335-8257

Essmyer, Joseph K AN
P. O. Box 877
Cape Girardeau, MO 63701
314-335-3070

Every, Pamela D R
Cape Radiology Group
36 Doctors' Park
Cape Girardeau, MO 63701
314-335-6671

Felker, J. Russell U
3 Doctors Park
Cape Girardeau, MO 63701
314-334-7748

Foley, Jonathon K CDS
10 Doctors Park
Cape Girardeau, MO 63701
314-334-3074

Freeman, Michael R GE
21 Doctors Park
Cape Girardeau, MO 63701
314-334-8870

Gile, Robert J AN
#37 Doctors' Park
P. O. Box 877
Cape Girardeau, MO 63701
314-335-3070

Glenn, Theodore J P
53 Doctors Park
Cape Girardeau, MO 63701
314-335-7899

Grable, James D GP
30 Doctors' Park
Cape Girardeau, MO 63701
314-334-2262

Griffith, S Kent FP
63 Doctors Park
Cape Girardeau, MO 63701
314-334-4766

***Hall, John P** U
3 Doctors
Cape Girardeau, MO 63701
314-334-7748

Haycraft, Gordon L CD
14 Doctors Park
Cape Girardeau, MO 63701
314-334-9641

Higgins, Michael D R
36 Doctors Park
POBox 1330
Cape Girardeau, MO 63701
314-335-6671

***Hoffman, James E** PD
23 Doctors
Cape Girardeau, MO 63701
314-334-7796

Holcomb, John K FP
60 Doctors Park
Cape Girardeau, MO 63701
314-334-1123

Holzum, Donna AN
37 Doctors' Park
POBox 877
Cape Girardeau, MO 63701
314-335-3070

Honaas, Trygve O GE
#68 Doctors' Park
Cape Girardeau, MO 63701
314-334-2801

Horn, Paul C PTH
361 Doctors Park
Cape Girardeau, MO 63701
314-334-2886

Hosler, Mark W PTH
1701 Lacey
SEMO Hospital
Cape Girardeau, MO 63701
314-651-5539

Hunt, Robert S GS
10 Doctors Park
Cape Girardeau, MO 63701
314-334-3074

Icaza, Ramiro FP
P. O. Box 505
Jackson, MO 63755
314-243-3115

***Isaacs, Victor E** FP
2102 Main St.
Scott City, MO 63780
417-264-2168

Jaeger, Jos N GP
938 Shady Lane
Jackson, MO 63755
314-243-2343

Jedlinski, Michael T IM
#14 Doctors Park
Cape Girardeau, MO 63701
314-334-9641

Johnson, E D R
36 Doctors' Park
P.O.Box 1330
Cape Girardeau, MO 63701
314-335-6671

Johnson, Earl W R
1044 N. Henderson
Cape Girardeau, MO 63701
314-334-2027

Jung, Christopher H OTO
1 Doctors Park
Cape Girardeau, MO 63701
314-334-7173

Jung, J. Marshall OPH
64 Doctors Park
Cape Girardeau, MO 63701
314-334-5265

Kamath, K.P.S. P
815 Independence
Cape Girardeau, MO 63701
314-334-4002

Kasten, Mark C FP
63 Doctors Park
Cape Girardeau, MO 63701
314-334-4766

Kasten, Melvin C GS
10 Doctors Park
Cape Girardeau, MO 63701
314-334-3074

Khan, Khalid I PUD
62 Doctors Park
Cape Girardeau, MO 63701
314-335-5359

Kies, Richard L OPH
1819 Broadway St.
Cape Girardeau, MO 63701
314-335-9175

Kim, Yong Kie NS
3004 Gordonville Rd.
Cape Girardeau, MO 63701
314-651-3188

Kinder, James A PD
1435 Mt Auburn Road
Cape Girardeau, MO 63701
314-334-3300

Kinder, Jerry L GS
10 Doctors Park
Cape Girardeau, MO 63701
314-334-3074

Kouo, Louis GE
68 Doctors Park
Cape Girardeau, MO 63701
314-334-0341

Kratz, Paul E GYN
2560 Independence
Cape Girardeau, MO 63701
314-334-5700

LaFoe, William K CD
25 Doctors Park
Cape Girardeau, MO 63701
314-334-6008

Lee, David Y S N
3004 Gordonville Rd.
Cape Girardeau, MO 63701
314-651-3188

Lee, Wilfred GE
21 Doctors' Park
Cape Girardeau, MO 63701
314-334-8870

Lents, Rickey L ORS
48 Doctor's Park
Cape Girardeau, MO 63701
314-335-8257

Lovinggood, Thos A PTH
2505 Allendale
Cape Girardeau, MO 63701
314-651-5539

Lyskowski, Maria M P
2301 Bellridge Pike
Cape Girardeau, MO 63701
314-651-3188

Mangunta, Vijaya K P
215 West Main St.
Jackson, MO 63755
314-243-8157

Marietta, William G CD
1577 Saratoga
Cape Girardeau, MO 63701
314-334-9127

Martin, Richard A OTO
17 Doctors Park
Cape Girardeau, MO 63701
314-335-4448

Masters, Edwin J FP
60 Doctors' Park
Cape Girardeau, MO 63701
314-334-0511

McDonald, Eugene F GP
930 Jackson Trail
Jackson, MO 63755
314-243-2322

McGinty, Chas P GS
35 Doctors' Park
Cape Girardeau, MO 63701
314-335-2663

McGinty, Frank H GS
#35 Doctors' Park
Cape Girardeau, MO 63701

McIntosh, Douglas A EM
Rt.3 Box 241A
Jackson, MO 63755
314-334-4822

---

*Doctor of osteopathy.

042 — CAPE GIRARDEAU

***Mellies, Steven D** N
3004 Gordonville Road
Cape Girardeau, MO 63701
314-651-3188

Moore, Richard E AN
P. O. Box 751
Cape Girardeau, MO 63701
314-335-0185

Morgan, Dix R TR
Radiation/Onconogy SEMO Hosp
1701 Lacey
Cape Girardeau, MO 63701
314-651-5544

Oehler, William F GP
1001 N. Henderson
Cape Girardeau, MO 63701

Otto, Thomas G ORS
48 Doctors Park
Cape Girardeau, MO 63701
314-335-8257

Palen, James E FP
15 Doctors Park
Cape Girardeau, MO 63701
314-335-0166

Pancoast, Charles H EM
St. Francis Medical Center
211 St. Francis Dr.
Cape Girardeau, MO 63701
314-339-6110

Parsons, D L FP
P. O. Box 2082
Cape Girardeau, MO 63702
314-334-1123

Perry, Robert E IM
60 Doctors Park
Cape Girardeau, MO 63701
314-651-4443

***Pewitt, Charles S** GP
545 Broadridge Rd.
Jackson, MO 63755
314-243-8408

***Pfautsch, Mark L** R
36 Doctors Park
POBox 969
Cape Girardeau, MO 63701
314-335-6671

Porter, Lynn W AN
P. O. Box 877
Cape Girardeau, MO 63701
314-335-3070

Pringle, Scot G OBG
55 Doctors
Cape Girardeau, MO 63701
314-334-5249

Pyeatte, Jacob P OBG
55 Doctors' Park
Cape Girardeau, MO 63701
314-334-5249

Ramsey, J. Darryl TS
1834 Broadway
Cape Girardeau, MO 63701
314-334-5070

***Ramsey, Jesse R** PD
1435 Mount Auburn Rd.
Cape Girardeau, MO 63701
314-335-8006

Rawlins, Fred E OBG
213 N. Sprigg
Cape Girardeau, MO 63701
314-334-5056

Reddy, R. Ramachandra PS
35 Doctors Park
Cape Girardeau, MO 63701
314-651-4150

Reimer, Donald R AN
833 Broadway
Cape Girardeau, MO 63701
314-334-5866

Ridings, G R TR
937 Broadway
Cape Girardeau, MO 63701

Ridings, Harold D IM
660 Sylvan Lane
Cape Girardeau, MO 63701

Ringer, C. Nelson OPH
#64 Doctors Park
Cape Girardeau, MO 63701
314-334-5265

Ritter, C J IM
14 Doctors Park
Cape Girardeau, MO 63701
314-334-9641

Ritter, Carl F R
P. O. Box 1330
36 Doctors Park
Cape Girardeau, MO 63701
314-335-6671

Ritter, Ray A ORS
48 Doctors Park
Cape Girardeau, MO 63701
314-335-8257

Ritter, Raymond A ORS
727 Bellevue #3D
Cape Girardeau, MO 63701
314-335-5825

Roberts, Perry T OTO
P.O. Box 1429
8 Doctors Park
Cape Girardeau, MO 63701
314-334-7718

Robinson, Ronald L IM
61 Doctors Park
Cape Girardeau, MO 63701
314-335-0174

Rohatgi, Reeta P
24 S. Mt. Auburn Rd.
Cape Girardeau, MO 63701
314-334-1100

Rosenquist, Chris R FP
63 Doctors' Park
Cape Girardeau, MO 63701
314-334-4766

Ruess, Robert W TS
1834 Broadway
Cape Girardeau, MO 63701
314-334-5070

***Russell, Robert B** AN
P. O. Box 751
721 N Sunset Blvd.
Cape Girardeau, MO 63702
314-335-0185

***Sacha, Robert F** A
8 Doctors Park
Cape Girardeau, MO 63701
314-335-1969

Schoenberger, John R IM
937 Broadway
Medical Arts Bldg.
Cape Girardeau, MO 63701
314-335-0412

Schroeder, Walter A OTO
35 Doctor's Park
Cape Girardeau, MO 63701
314-334-5007

Seabaugh, Wm L GS
P. O. Box 1144
Cape Girardeau, MO 63702
314-334-4471

Shakil, Mohammad N
66 Doctors
Cape Girardeau, MO 63701
314-334-7175

Shoss, Milton R
1 Oyster Catcher
Hilton Head Isl, SC 29928

Sides, Stanley D IM
14 Doctors Park
Cape Girardeau, MO 63701
314-334-9641

Smithson, Debra S FP
63 Doctors Park
Cape Girardeau, MO 63701
314-334-4766

Sparkman, Thomas C FP
15 Doctors Park
Cape Girardeau, MO 63701
314-334-6053

Spence, Paul A FP
60 Doctors Park
Cape Girardeau, MO 63701
314-334-0511

Spitler, Allen L CD
25 Doctors Park
Cape Girardeau, MO 63701
314-334-6008

***Stahly, Randall L** N
5 Doctors Park
Cape Girardeau, MO 63701
314-334-4110

Stahr, William D PTH
36-1 Doctors Park
Cape Girardeau, MO 63701
314-334-2886

Stoecker, Willeford J DR
36 Doctors' Park
POBox 1330
Cape Girardeau, MO 63701
314-335-6671

Talbert, Clifford R CD
25 Doctors
Cape Girardeau, MO 63701
314-334-6008

Taylor, Philip W RHU
14 Doctors Park
Cape Girardeau, MO 63701
314-334-9641

***Tedrick, Phillip D** EM
St. Francis Medical Center
211 St. Francis Drive
Cape Girardeau, MO 63701
314-335-1251

Terry, James W U
3 Doctors Park
Cape Girardeau, MO 63701
314-334-7748

***Tewis, Huey D** AN
P. O. Box 751
721 N. Sunset Blvd.
Cape Girardeau, MO 63702
314-335-0185

Thompson, Paul D U
#3 Doctors' Park
Cape Girardeau, MO 63701
314-334-7748

Thorpe, William P ORS
48 Doctors Park
Cape Girardeau, MO 63701
314-335-8257

Tobin, Gregory A PS
5 Doctors Park
Cape Girardeau, MO 63701
314-651-4488

Trantham, David M EM
St. Francis Med. Ctr.
211 St. Francis Dr.
Cape Girardeau, MO 63701
314-335-1251

Trueblood, Michael C ORS
48 Doctors Park
Cape Girardeau, MO 63701
314-335-8257

Turner, Michael O PD
1435 Mt. Auburn Rd.
Cape Girardeau, MO 63701
314-335-8006

Velander, Robert D EM
1803 Northbridge Drive
Cape Girardeau, MO 63701
314-334-4822

Weber-Bornstein, Nancy EM
1701 Lacey St.
Southeast Mo Hospital
Cape Girardeau, MO 63701
314-334-4822

Westcott, Bruce R AN
P. O. Box 877
Cape Girardeau, MO 63701
314-335-3070

Westrich, David J OPH
64 Doctors Park
Cape Girardeau, MO 63701
314-334-5265

Whitten, J S OBG
55 Doctors Park
Cape Girardeau, MO 63701
314-334-5249

Whittenberger, Brock P HEM
14 Doctors Park
Cape Girardeau, MO 63701
314-334-9641

Williams, Craig R
36 Doctors Park
Cape Girardeau, MO 63701
314-335-6671

Wilson, Chas F IM
1530 Oak Lei Dr.
Cape Girardeau, MO 63701

Wulfers, Michael C FP
Medical Arts Building
937 Broadway
Cape Girardeau, MO 63701
314-334-4424

Yates, Karen OTO
1 Doctors Park
Cape Girardeau, MO 63701
314-335-5120

Zoffuto, Anthony C IM
14 Doctors Park
Cape Girardeau, MO 63701
314-334-9641

046 — C-M-M-R

Ahad, Khandaker A OPH
643 N. Morley St.
Moberly, MO 65270
816-263-5363

Bade, Bruce IM
1513 Union Ave.
Suite 1600
Moberly, MO 65270
816-263-4040

Baker, Josephine D AN
614 Fisk St
Moberly, MO 65270
816-263-5267

Barnett, Floyd A GP
111 E Monroe St
Paris, MO 65275
816-327-4214

Bautista, Rogelio L GS
324 Circle Dr
Moberly, MO 65270
816-263-2650

Campbell, James E GP
1101 Jackson St
Macon, MO 63552
816-385-3141

Cohrs, Clarence C A
2 Flower Lane Terrace
Moberly, MO 65270
816-263-1747

Dalgleish, Frederick A OBG
1513 Union Ave.
Moberly Prof Arts Bldg.
Moberly, MO 65270
816-263-3600

---

*Doctor of osteopathy.

050 — CLAY-PLATTE

DeLine, Jim
1101 N. Jackson St.
Macon, MO 63552
314-443-2236

Dreyer, Philip V GP
208 Short St
Huntsville, MO 65259
816-277-4202

Edwards, Charles F PD
1145 South Morley
Moberly, MO 65270

Eggleston, Donald E GP
8721 Alhambra
Prairie Village, KS 66207

Fleming, David A IM
1513 Union St.
Moberly, MO 65270
816-263-4040

Fleming, J. Will IM
1513 Union Ave.
Moberly, MO 65270
816-263-4040

Harms, Lawrence L OBG
Deaconess Hospital
3908 S. Grand
St. Louis, MO 63118

Kays, Kenneth M R
1729 Lakewood Dr.
Moberly, MO 65270
314-443-4591

Kleopfer, Lynn L PTH
Moberly Regional Med Ctr
P. O. Box 3000
Moberly, MO 65270
816-263-8400

Lamonda, Gary W IM
1513 Union Ave.
Moberly Prof Arts Bldg
Moberly, MO 65270
816-263-4040

Lin, C H OBG
1513 Union
Moberly, MO 65270
816-263-7087

Lin, H T IM
1313 Union Ave. Suite 1200
Moberly Prof. Arts Bldg
Moberly, MO 65270
816-263-1340

Schondelmeyer, R. Wade IM
1513 Union
Moberly, MO 65270
314-263-4040

Stuart, Danl D GP
313 N. Small
Brunswick, MO 65236
816-548-3566

Tompson, Robt V GS
712 Gilman Rd.
Moberly, MO 65270
816-263-6045

Turnbaugh, Thomas R ORS
Jeff City Bone & Joint Clini
1433 Southwest Blvd.
Jefferson City, MO 65109
816-263-6494

050 — CLAY-PLATTE

Albani, Lawrence A U
2700 Hospital Drive Ste 370
No Kansas City, MO 64116
816-842-0171

Albani, Frank J U
34 Westwoods Dr.
Liberty, MO 64068
816-781-8400

Allain, James J OPH
4308 W. 83rd St.
Prairie Village, KS 66208

Allan, James R GP
Rt. 3, Box 141C
Spinnacher Point #345
Eldon, MO 65026

Allen, Louis A PTH
6501 E. Commerce Ave. #101
Kansas City, MO 64120
816-241-3000

Armstrong, Jay H R
4812 Black Swan Dr
Shawnee Mission, KS 66216

Arst, Herbert E IM
1201 NE 81st Street
Kansas City, MO 64118
816-436-4489

Bashford, Eileen A AN
2700 Rockcreek Parkway #306
NO Kansas City, MO 64111
816-221-5050

Bates, G. Comer CD
102 E 43rd Street
Kansas City, MO 64116

Beggs, Charles W GS
Westowne III,
Liberty, MO 64068
816-781-3515

Benson, Larry E IM
2700 Hospital Dr Ste 240
No. Kansas City, MO 64116
816-744-9353

Boone, Daniel C OM
5800 North Grand
Kansas City, MO 64118

Bowles, Richard P FP
140 Westwood Dr.
Liberty, MO 64068
816-781-4740

Bowser, Robert L AN
2400 R.D. Mize Rd. Suite 1
Independence, MO 64057

Breckenridge, Robert L PTH
6501 E. Commerce Ave. #101.
Kansas City, MO 64120
816-241-3000

Brill, Joachim R PD
30 Westwoods Drive
Liberty, MO 64068
816-781-7979

Burk, Emmett K IM
Westowne III
Liberty, MO 64068
816-781-8100

Burroughs, Nathan D OTO
2700 Hospital Dr Suite 430
No Kansas City, MO 64116
816-421-0540

Calhoun, Terry L IM
5601 N Antioch Rd.
Suite 12
Kansas City, MO 64119
816-453-6100

Cook, Jerry W OPH
7010 N Cherry
Kansas City, MO 64118
816-436-4204

Cooper, Barry R DR
2800 Hospital Dr Radiology
N Kansas City, MO 64116
816-221-1600

Cooper, Gary D GE
Suite 100 Westowne III
Liberty, MO 64068
816-781-8100

Couch, Jeffrey M OPH
Midwest Eye Institute #550
2700 Hospital Drive
No Kansas City, MO 64116
816-421-0900

Curnow, Richard B ORS
Westowne Offices
Liberty, MO 64068
816-781-6066

***Davis, Larry E** AN
2800 Hospital Dr.
Kansas City, MO 64116
816-346-7760

Deligeorges, John OPH
5400 N. Oak Ste 202
Creekwood Prof Bldg.
Kansas City, MO 64118
816-455-2020

Devine, Mark W OTO
2700 Hospital Drive
N Kansas City, MO 64116
816-421-0540

Douglass, Eric J AN
625 Butternut Lane
Liberty, MO 64068

Edwards, Theodore F PD
512 NW 43rd Terrace
Kansas City, MO 64116

Epstein, Mark L GS
P. O. Box 412
620 Commercial
Smithville, MO 64089
816-532-4600

Fakhoury, Donald A GP
5400 N. Oak Trafficway #200
Kansas City, MO 64118
816-453-0900

Fischer, Edward H CD
122 Woodlands Box 11
Gladstone, MO 64119
816-452-1249

Fortin, Don G PS
4444 N. Belleview Suite 204
Kansas City, MO 64116
816-455-3062

Fowler, I. Charles OM
1617 Bentwood
Sun City Center, FL 33570

Gauer, Robt J PD
5601 NE Antioch Rd. Suite 3
Kansas City, MO 64119

Gordon, Mark E IM
2900 Baltimore #307
Kansas City, MO 64108
816-753-7990

***Graves, Karladine E** FP
Briarcliff Med Assoc #200
5400 N. Oak Trafficway
Kansas City, MO 64118
816-453-0900

Haas, Robert W ORS
Suite R Westowne Office
Liberty, MO 64068
816-781-6066

Hagan, John C OPH
2700 Hospital Dr
550 Professional Bldg N
No Kansas City, MO 64116
816-421-0900

***Hamilton, William V** OBG
2700 Hospital Drive #450
No Kansas City, MO 64116
816-221-7171

Hayes, Lawrence L GP
8630 N Oak St Trfwy
Kansas City, MO 64155
816-436-1800

Hedges, Richard C OM
2025 Swift
N. Kansas City, MO 64116
816-221-0058

Hendren, Thos H GS
Westowne III Ste 101
Liberty, MO 64068
816-781-3515

Henry, Jos E IM
8901 W. 74th St.
Suite 348
Shawnee Mission, KS 66208
913-432-8000

Hodge, Robt H IM
2204 NE 39th St
Kansas City, MO 64116

Huk, Stephen G CHP
Tri-County Mental Health Ctr
2900 Hospital Dr.
N. Kansas City, MO 64116
816-346-7880

Jackson, Roger P ORS
2750 Hospital Dr. Suite 600
Kansas City, MO 64116

Kanne, Marty A FP
8630 N Oak Trafficway
Kansas City, MO 64155
816-436-1800

Katf, Nicola Y P
3 West 126th Terrace
Kansas City, MO 64145
816-444-4082

Kauk, Bruce A IM
2029 Burlington
N Kansas City, MO 64116
816-474-9232

Kelly, Joseph G AN
P.O.Box 7391
No. Kansas City, MO 64116

Ketcherside, W. Joseph NS
113 Blue Jay Dr. Suite 200
Liberty, MO 64068

Kirkland, Jerry A IM
8630 North Oak
Kansas City, MO 64155
816-436-1800

Kobbermann, Thomas W OBG
Northland Obstetrics
28 Westwoods Dr.
Liberty, MO 64068
816-781-7280

Kuenzi, Donald E FP
8630 N Oak Trfwy
Kansas City, MO 64155
816-436-1800

***Landers, Gary A** EM
2800 Hospital Drive
N Kansas City, MO 64116
816-346-7999

Latimer, Walter N PD
5950 N. Oak Suite 103
Gladstone, MO 64118
816-454-6600

Leslie, Stephen A PDA
6401 N. Prospect
Gladstone, MO 64119
816-454-5200

Lila, Aram IM
1205 N Jesse James Rd
Excelsior Spgs., MO 64024
816-637-2155

***Lillig, James F** GP
4110 N.E. Vivion Rd.
Kansas City, MO 64119
816-455-1640

Littlejohn, Robert T ORS
2700 Hospital Drive
N Kansas City, MO 64116
816-474-5240

Loggan, Michael B IM
114 B Westwoods
Liberty, MO 64068
816-781-8445

Luerding, Jeffrey A FP
8630 N. Oak
Kansas City, MO 64155
816-436-1800

---

*Doctor of osteopathy.

050 — CLAY-PLATTE

MacNaughton, Robert A R
P. O. Box 5
Smithville, MO 64089
816-792-7083

Mann, Kenneth R IM
Suite 530 2700 Hospital Dr.
Kansas City, MO 64116
816-421-4240

McCalla, John P AN
649 Huntington Rd
Kansas City, MO 64113

McCanse, Lynn R U
2700 Hospital Suite 200
No. Kansas City, MO 64116
816-842-6717

McCluggage, Newton C IM
2700 Hospital Dr
No. Kansas City, MO 64116
816-421-4240

McCormick, James E GP
309 Northcrest Dr.
Kansas City, MO 64116

McCray, Stephen A AN
320 Armour Rd. #200
N. Kansas City, MO 64116
816-453-4688

McGovney, Janice K IM
P. O. Box 403
Smithville, MO 64089
816-532-0200

McKnight, Scott J OPH
Westowne III Suite 302
Liberty, MO 64068

McNamara, Gerald R ORS
Suite 250 2700 Hospital Dr.
NO. Kansas City, MO 64116
816-781-5877

McPhee, Wm R PTH
1205 W 76th St
Kansas City, MO 64114

Mossie, Raymond D PS
4444 N. Belleview Suite 204
Kansas City, MO 64116
816-452-1006

Myers, David W OBG
610 S Commercial Ave
Smithville, MO 64089
816-532-4700

***Negrete, Abelardo** P
2700 Hospital Drive Ste 510
Kansas City, MO 64116
816-474-9921

Nourbakhsh, Mahmoud M GS
5400 N. Oak Tfwy Suite 203
Kansas City, MO 64118
816-471-0909

Nussbaum, Larry PD
2525 Glenn Hendren Dr.
Liberty, MO 64068
816-781-7200

Othmer, Ekkehard P
4800 NW 88th St.
Kansas City, MO 64154
816-468-3933

Pingleton, William W PUD
Suite 201 851 NW 45th St.
Gladstone, MO 64116

Piontek, James F AN
1495 Hemlock
Liberty, MO 64068

Porubsky, Gary L ORS
2700 Hospital Dr Suite 340
No. Kansas City, MO 64116
816-474-5240

Prickett, David C EM
Liberty Hosp Dept Emerg/Med
2525 Glenn W Hendren Dr
Liberty, MO 64068
816-781-7200

Purcell, Paul W GP
201 Union Ave. S.E. No. 12
Renton, WA 98056

Reardon, Thomas M GS
5820 NW Barry Rd. #400
Kansas City, MO 64154
816-556-3505

Reeder, Chas C GP
P. O. Box 342
Smithville, MO 64089
816-532-0200

Revare, Paul FP
8517 N. Beaman
Kansas City, MO 64154

Robinson, Van M OBG
P. O. Box 2536
Carefree, AZ 85377

Rockwell, Wayne L OBG
2508 Arno
Mission Hills, KS 66208

Russell, Nancy R IM
5140 North Antioch Road
Kansas City, MO 64119
816-453-5545

Russell, Steven L IM
409 Camelot
Liberty, MO 64068
816-792-1646

Sawyer, Floyd E PD
#5 The Woodlands
Gladstone, MO 64119

Saxon, Keith G OTO
Westowne IV, Suite 205
Liberty, MO 64068
816-781-1001

Schertz, Truman B OPH
428 NW Briarcliff Rd.
N Kansas City, MO 64116
816-221-7880

Schutz, John P US
1236 Jesse James Road
Excelsior Sprgs, MO 64024
816-637-6023

Siegel, Charles PD
6000 N. Oak Trafficway #102
Gladstone, MO 64118
816-453-7771

Simon, Gracita S AN
1020 N Woodland Dr
Kansas City, MO 64118

Slaughter, Carl R OBG
Rt. 3, Box 320-02
Petie Jean Mountain
Morrilton, AR 72110

***Smith, Charles H** OM
6203 Circle Dr.
Kansas City, MO 64118

Somoza, Jose R PTH
6501 E. Commerce Ave. #101
Kansas City, MO 64120
816-241-3000

Sportsman, Weldon L A
7504 N Oak St Trfy
Kansas City, MO 64118
816-436-7100

Stewart, James L IM
9801 Hampton Woods Dr.
Kansas City, MO 64152

Stratman, Clarence A FP
5601 N. Antioch Rd. Suite 14
Kansas City, MO 64119
816-454-2666

Thomas, Fred A D
5601 N Antioch
Kansas City, MO 64119
816-454-3424

Thomas, Leslie D ORS
2700 Hospital Drive Ste 250
No Kansas City, MO 64116
816-421-6114

Thompson, Frederick E PS
405 E. 19th Ave.
N. Kansas City, MO 64116
816-472-8322

Torres, Paul GS
Gashland Clinic
8630 North Oak
Kansas City, MO 64155
816-436-1800

Triplett, Daniel A OBG
124 Westwoods Drive
Liberty, MO 64068
816-781-7820

True, James D P
508 N.W. 44th St.
Gladstone, MO 64116
816-453-4862

Tumanut, Benesto F OTO
504 NE 70
Gladstone, MO 64118
816-436-2727

Underwood, Johnson GS
5601 N.E. Antioch Rd. # 9
Kansas City, MO 64119
816-453-4000

Vilmer, Charles E ORS
2030 Swift Ave
No. Kansas City, MO 64116
816-842-8404

Vilmer, Stephen E ORS
7550 W. 99th Terr
Shawnee Mission, KS 66212

Walker, Donald E P
4320 Wornall Rd. Suite 704
Kansas City, MO 64111
816-561-2524

Waltz, James R GS
Seaport Office Complex
16 Westwoods Drive
Liberty, MO 64068
816-781-9188

Waterman, Franklin M GP
5811 Truman Road
Kansas City, MO 64126

Webb, John M GS
2750 Hospital Dr. Ste. 220
Kansas City, MO 64116
816-474-6464

Weide, Allan R U
P. O. Box 12361
2700 Hosp.Dr.Suite 200
N Kansas City, MO 64116
816-842-6717

Werner, Dean F OM
4609 N. Main
Kansas City, MO 64116

Werner, F. Scott GS
Suite 9 5601 NE Antioch Rd.
Kansas City, MO 64119
816-453-4000

Werner, Franklin C GS
5601 N. E. Antioch Rd. #9
Kansas City, MO 64119
816-453-4000

Wheeler, Paul D OBG
Northland Obstetrics
28 Westwoods Dr.
Liberty, MO 64068
816-474-5310

Williams, Robert D TS
4444 N. Belleview
Kansas City, MO 64116

Williams, John M GP
102 S Forest
Liberty, MO 64068
816-781-4711

Williamson, Geo L ORS
14413 N. 29th Ave.
Phoenix, AZ 85023
816-842-8404

Wilson, David E FP
8630 N Oak Trafficway
Kansas City, MO 64155
816-436-1800

Wilson, Timothy A FP
P. O. Box 403
Smithville, MO 64089
816-532-0200

Withrow, John B FP
3925 N Main
Kansas City, MO 64116

Wood, Terrance L OTO
Westowne IV Ste 205
Liberty, MO 64068
816-781-1001

Workman, Chas E ORS
6609 Milhaven Dr.
Mission, KS 66202

Woy, George H ORS
Suite 250 2700 Hospital Dr.
No. Kansas City, MO 64116
816-781-5877

Wright, Earl J PTH
6501 E. Commerce Ave. #101
Kansas City, MO 64120
816-241-3000

Young, Patricia A AN
840 W. 57th Terrace
Kansas City, MO 64113
816-453-1393

054 — CLINTON

Luckenbill, Paul T GP
Eighth and Frost St
Plattsburg, MO 64477
816-539-2117

Ozenberger, Larry A GP
400 Clay Ave
Plattsburg, MO 64477

Sweiger, James H GP
400 West Clay
Plattsburg, MO 64477
816-539-2117

Thompson, Susan FP
903 W. Clay
Plattsburg, MO 64477

058 — COLE

Allan, James E FP
2709 Industrial Dr.
Suite A
Jefferson City, MO 65109
314-893-5535

Balcer, Charlotte M P
606 Mesa Dr.
Jefferson City, MO 65101

Belden, Edgar A PH
2124 Lowell
Jefferson City, MO 65109
314-636-4497

Belshe, Sidney B DR
1922 Brookgreen
Jefferson City, MO 65101
314-636-4215

Bennett, John E FP
St. Mary's Hospital
Jefferson City, MO 65101

Boyer, Peter A IM
1505 Southwest Blvd
Jefferson City, MO 65109
314-634-2620

---

*Doctor of osteopathy.

058 — COLE

Braun, Alan L IM
200 St Mary's Med Plaza #302
Jefferson City, MO 65102
314-636-7183

Bregant, Robt E IM
1505 Southwest Blvd
Jefferson City, MO 65109
314-634-2620

Buffaloe, Robert N FP
1505 Southwest Blvd.
Jefferson City, MO 65109
314-636-7161

***Cameron, Roger W** ORS
1433 Southwest Blvd.
Jefferson City, MO 65109
314-636-5285

Carr, George W FP
3137 Williamsburg Way
Jefferson City, MO 65109
314-635-9999

Cooper, Chas W FP
300 E Dunklin
Jefferson City, MO 65101
314-636-2169

Courter, Larry P R
RR 1 Box 400
Osage Beach, MO 65065

Cox, Curtis S NS
1433 Southwest Blvd.
Jefferson City, MO 65109
314-636-5285

Craighead, Michael L GS
1309 Edgewood
Jefferson City, MO 65109
314-635-2300

Davisson, Walter F OPH
1820 Southwest Blvd.
Jefferson City, MO 65109
314-635-0115

Denton, John L OBG
200 St. Marys Medical Plaza
Suite 102
Jefferson City, MO 65101
314-634-3666

Doerhoff, Adelia L AN
1015 Madison
Jefferson City, MO 65101
314-635-5010

Doerhoff, Alan R GS
1111 Madison
Jefferson City, MO 65101
314-635-5010

Doerhoff, Carl R GS
1111 Madison St.
Jefferson City, MO 65101
314-635-5010

Domke, Henry F FP
Rt. 2, Box 479
New Bloomfield, MO 65063
314-634-5000

***Ennis, James R** GP
Holts Summit Family Clinic
198 W. Simon Blvd.
Holts Summit, MO 65043
314-896-5115

Exon, C S GS
1505 Southwest Blvd
Jefferson City, MO 65109
314-634-3334

Falzone, John J U
Urology Care Inc.
1025 Northeast Dr.
Jefferson City, MO 65101
314-636-5115

Ferris, Robert E OBG
200 St. Marys Medical Plaza
Suite 102
Jefferson City, MO 65101
314-636-5248

***Frederick, Mark R** AN
915 Leslie Blvd Suite E
Jefferson City, MO 65101
314-635-5533

Fulks, Richard B GP
Box 410
California, MO 65018

***Giffen, Lawrence E** FP
1606 Hayselton
Jefferson City, MO 65109
314-635-0916

Gordon, James S AN
600 Boonville Rd
Jefferson City, MO 65109
314-635-5533

Guhleman, Henry V P
2018 Greenberry Rd.
Jefferson City, MO 65101
314-635-2592

Gunn, Victoria D
1300B Edgewood Dr.
Jefferson City, MO 65109
314-634-4200

***Hancock, Thomas J** FP
1111 Madison St.
Jefferson City, MO 65101
314-635-6156

Handler, Fred P PTH
139L North Central
Clayton, MO 63105
314-721-5833

Harmon, Robert G IM
P. O. Box 570
1730 E. Elm
Jefferson City, MO 65102
314-751-4330

Hauser, Robert J OBG
1431 Southwest Blvd
Jefferson City, MO 65109
314-636-5248

Henry, Lawrence D PTH
715 Swifts Highway
Jefferson City, MO 65109
314-636-8818

Hernandez, J. Humberto FP
RR3 Box 99
California, MO 65018
314-796-3143

Hooshmand, Ahmad N
915 SW Blvd. Suite E
Jefferson City, MO 65109
314-634-4700

Jennett, Richard B GE
200 St. Mary's Plaza #302
Jefferson City, MO 65101
314-636-7183

Kanagawa, Harold K IM
200 St. Marys Plaza
Jefferson City, MO 65101
314-636-7183

Kimlinger, William R FP
2637 Kenwood Dr.
Jefferson City, MO 65109
314-882-2996

Krautmann, John J ORS
1433 Southwest Blvd
Jefferson City, MO 65109
314-636-5285

Landsbaum, Charles J IM
200 St. Marys Plaza
Suite 302
Jefferson City, MO 65101
314-636-7183

Leslie, James T ORS
1433 Southwest Blvd
Jefferson City, MO 65109
314-636-5285

Loyd, Earl L IM
R.R. 3 Box 3522
Riviera Heights
Holts Summit, MO 65043

Lueckenhoff, Rebecca R FP
2709 Industrial Drive
Jefferson City, MO 65109
314-636-3388

Lyskowski, John C P
1203 Elmerine
Jefferson City, MO 65101
314-636-2082

Marshall, William H OBG
200 St. Marys Medical Plaza
Suite 102
Jefferson City, MO 65101
314-636-5248

Marty, David R OTO
1021 Northeast Dr.
Jefferson City, MO 65101
314-635-7901

Matthews, John I IM
1314 Moreau Dr
Jefferson City, MO 65101
314-636-7183

McCaffree, Mary K IM
812 Crestmere
Jefferson City, MO 65109
314-634-2620

McIntire, Timothy L PTH
100 St. Mary's Blvd.
Jefferson City, MO 65101
314-635-7642

Meier, Francis X FP
1913 Hayselton Dr
Jefferson City, MO 65109
314-636-9742

Meyer, Randall E CD
200 St. Mary's Medical Plaza
Suite 302
Jefferson City, MO 65101
314-636-7183

***Michael, Roy A** AN
1015 Madison St.
Jefferson City, MO 65101
314-635-5010

Miller, Donald IM
Route 6 Box 320
Jefferson City, MO 65101
314-636-7183

***Morley, Ronald F** AN
915 Leslie Blvd.
Jefferson City, MO 65101
314-635-5533

Murray, Eric AN
St. Marys Health Ctr(Anes)
100 St. Marys Med Plaza
Jefferson City, MO 65101
314-635-7642

Ossman, Julian A GS
2407 W Main
Jefferson City, MO 65109
314-636-9742

Ragland, John E GP
P O Box 517
Linn, MO 65051
314-897-2237

Rea, James L OTO
1021 Northeast Dr.
Jefferson City, MO 65101
314-635-7901

Rice, Karen H IM
1505 Southwest Blvd.
Jefferson City, MO 65109
314-634-2620

Robbins, Thomas D FP
200 St. Marys Medical Plaza
Suite 202
Jefferson City, MO 65101
314-635-9999

Ryan, Thomas J ORS
1433 Southwest Blvd
Jefferson City, MO 65109
314-636-5285

Sanders, Jack S CD
1505 Southwest Blvd
Jefferson City, MO 65109
314-634-2620

Scearce, Robert L DR
420 Crystal View Terr.
Jefferson City, MO 65109
314-636-4215

***Schekorra, Fred W** AN
915 Leslie Blvd. Suite E
Jefferson City, MO 65101
314-635-5533

Scherr, David D ORS
1111 Madison St
Jefferson City, MO 65101
314-634-4202

Schmidt, Jerome H U
1025 Northeast Drive
Jefferson City, MO 65101
314-636-5115

Schokker, Johannes GS
1309 Edgewood
Jefferson City, MO 65109
314-635-9011

Scott, E. David FP
2009 E McCarty
Jefferson City, MO 65101
314-635-2542

Shull, G D FP
1925 Hayselton Drive
Jefferson City, MO 65109
314-635-1460

Siu, Kenneth K C GS
1309 Edgewood
Jefferson City, MO 65109
314-635-2300

Stauffer, Harry B OPH
830 Boonville Road
Jefferson City, MO 65109

Stauffer, Larry K OPH
700 W. High
P. O. Box 1669
Jefferson City, MO 65102
314-634-3221

Stricker, Harold C OBG
2350 Zion Road
Jefferson City, MO 65109

Su, Philo S OBG
2712 Plaza Drive
Jefferson City, MO 65109
314-893-5500

Sugarbaker, Everett D GS
2113 W. Main St.
Jefferson City, MO 65109
314-636-8542

Summers, Jos S DR
515 East High
Jefferson City, MO 65101
314-636-2657

Tanner, Robert H FP
1505 Southwest Blvd
Jefferson City, MO 65109
314-636-7161

Taylor, Leon A GP
1104 W Main St
Jefferson City, MO 65109

VanVranken, Eugene E PH
2037 Tower
Jefferson City, MO 65109
314-635-5017

Wankum, Robert P OPH
1101 D Southwest Blvd.
Jefferson City, MO 65109
314-634-2722

Watts, Byron E R
2937 Valley View Terrace
Jefferson City, MO 65109
314-893-2937

---

*Doctor of osteopathy.

Weiss, James J FP
701 W. High Street
Jefferson City, MO 65101
314-636-3192
Werth, Joseph A D
1233 Jefferson St.
Jefferson City, MO 65109
314-634-2933
Westhoff, David D IM
1505 Southwest Blvd
Jefferson City, MO 65109
314-634-2620
Winegar, Alvon C OBG
819A Southwest Blvd.
Jefferson City, MO 65109
Winton, Mark D IM
200 St. Mary's Blvd Ste 302
Jefferson City, MO 65101
314-636-7183
***Young, Michael A** NEP
1111 Madison St.
Jefferson City, MO 65101
314-635-2495

066 — D-H-P-D

***Alden, John E** GP
203 W. 11th
Lamar, MO 64759
417-682-3351
Carnell, Billy M GP
P. O. Box 830
Buffalo, MO 65622
417-345-6101
Crabtree, Jay B DR
Citizens Memorial Hospital
Bolivar, MO 65613
417-326-6000
Dias, Wenceslaus P GS
1245 N. Butterfield Rd.
P. O. Box 820
Bolivar, MO 65613
417-326-3630
Donnell, William S FP
1300 N. Oakland
Bolivar, MO 65613
417-326-6021
Griffin, M E FP
3433 Cooper Blvd.
Springfield, MO 65802
Griffin, Olin A PH
3433 Cooper Blvd.
Springfield, MO 65802
Harris, Louis B FP
1502 S. Oakland
Bolivar, MO 65613
417-326-6021
Koon, Benny H FP
1300 North Oakland
Bolivar, MO 65613
417-326-6021
Magaw, David C GP
Rt 1
Everton, MO 65646
Molchan, James L GS
P. O. Box 507
708 N. Pomme De Terre
Bolivar, MO 65613
417-326-3765
Nix, J. Gustavo IM
1100 S. Springfield
Bolivar, MO 65613
417-326-8500
Wright, Keith A FP
1300 N. Oakland
Bolivar, MO 65613
417-326-6021

070 — DUNKLIN

Cheng, Tuan Chou U
P. O. Box 309
Kennett, MO 63857
314-888-4977
English, Wallace D FP
Senath Nursing Home
Senath, MO 63876
Kakaiya, Dilip H GS
P.O. Box 607
Kennett, MO 63857
314-888-2628
Kuo, Gong T OBG
501 Teaco Rd
Kennett, MO 63857
314-888-1117
Miltenberger, Paul C GS
705 West Washington
Kennett, MO 63857
Morehead, Wm E GP
505 N Beckwith
Malden, MO 63863
314-276-2221
Newland-Pagan, Yvonne C
P. O. Box 806
Kennett, MO 63857
314-888-6011
Palenske, Robt L FP
Hornersville, MO 63855
Pehlman, Jos E PD
1207 North Douglas
Box 526
Malden, MO 63863
314-276-3884
Robinson, Nicholas F IM
906 St. Francis
Kennett, MO 63857
314-888-6603
Sinasa, Surat IM
501 Teaco Rd.
Kennett, MO 63857
314-888-3533
Sisler, Maynard L IM
611 Teaco Rd.
Kennett, MO 63857
314-888-4992
Smith, Porter OPH
1231 First St.
Kennett, MO 63857
314-888-3335
Soonattrakul, Wuthisak IM
105 E. Washington
Kennett, MO 63857
314-888-1137
Tungsiripat, Soros PD
604 Teaco Rd.
Kennett, MO 63857
314-888-9281
Zimmerman, Joe A GP
1105 White Oaks Pl.
Kennett, MO 63857
314-888-4522

074 — F-G-W

Agasino, Gaudencio L OBG
#20 Hughes Ford Road
Sullivan, MO 63080
314-468-8059
Allen, Jerry H PD
800 E. Fifth St
Suite 202
Washington, MO 63090
314-239-7892
Apte, Sunil M U
800 East Fifth St. Suite 305
Washington, MO 63090
314-239-7559
Aulenbacher, Carl E GS
3400 N.E. 12th Ave Ste 168
Ft. Lauderdale, FL 33334
Baker, Donald L FP
301 Hwy 50 West
Union, MO 63084
314-583-2508
Banerjee, Dilip IM
800 E 5th Suite 205
Washington, MO 63090
314-239-2711
Bonney, Saml C EM
Urgi Care
1801 Heritage Hills Ctr
Washington, MO 63090
314-239-4123
Brockman, Kirk E FP
370 N. Commercial
St. Clair, MO 63077
314-629-3300
Brunworth, David FP
10 Franklin
Washington, MO 63090
314-239-2741
Cassat, James D GS
800 E. 5th St. Suite 104
Washington, MO 63090
314-239-7727
Colter, Kim D FP
800 E. 5th St
Washington, MO 63090
314-239-4100
Crane, John B P
1113 E. 5th St.
Washington, MO 63090
314-239-7705
Crespo, Horacio T FP
213 E. Boonslick Rd.
Warrenton, MO 63383
314-456-2633
Crespo, Remedios R FP
213 E. Booneslick Rd.
Warrenton, MO 63383
314-456-2633
Dean, Philip D N
800 E. 5th St. Suite 112
Washington, MO 63090
314-239-5444
Dierberg, Dale F DR
2753 Autumn Run Ct.
Chesterfield, MO 63017
314-486-2191
Eisenmann, Benj P FP
New Haven, MO 63068
Farrell, Sammy L FP
10 Franklin
Washington, MO 63090
314-239-2741
Grisham, Thomas D FP
10 Franklin Ave.
Washington, MO 63090
314-239-2741
Hoelscher, Harold F GP
474 Cottonwood Ct.
Warrenton, MO 63383
314-456-7799
Jamroz, Greg A R
200 Madison Ave.
Washington, MO 63090
314-239-7711
Kim, Yang H OBG
800 East 5th St.
Suite 105
Washington, MO 63090
314-239-6600
Lentz, Kathy J OPH
Suite 102 Mercy Doctors Bldg
800 E. Fifth St.
Washington, MO 63090
314-239-2008
Lenzenhuber, Karl J R
200 Madison Ave.
Washington, MO 63090
314-239-7711
Long, Timothy P FP
Box 308
Marthasville, MO 63357
314-433-5411
Marchiando, Albert W OTO
800 E Fifth St. Suite 113
Washington, MO 63090
314-239-1770
Matthews, Thomas D PD
800 E. 5th St. Suite 202
Washington, MO 63090
314-239-9011
Mitchell, Thos J FP
865 N. Commercial
St. Clair, MO 63077
314-629-1141
Morehouse, Paul D GS
Mercy Doctors Building
800 E. 5th St. #201
Washington, MO 63090
314-239-4144
O'Connor, John J FP
615 S. Third
Warrenton, MO 63383
314-456-3858
Potts, Gregory A OBG
800 E. 5th St. #304
Washington, MO 63090
314-239-1101
Radel, Steven M FP
104 Miller St.
New Haven, MO 63068
314-237-3031
Rau, Michael E IM
800 E. 5th St.
Washington, MO 63098
314-239-0444
Rawson, Perry G PTH
St Francis Mercy Hosp.
Washington, MO 63090
314-239-7711
Richardson, Wm R FP
301 Hwy 50 West
Union, MO 63084
314-583-2508
Richardson, Geo A FP
301 Hwy 50 West
Union, MO 63084
314-583-2508
Seeck, Linda E OBG
800 E. 5th St. Suite 111
Washington, MO 63090
314-239-1344

Shaw, James T FP
Southwest Medical Associates
Route 1, Box 30-1
Hermann, MO 65041
314-486-2118

Shea, James G IM
2 Hillcrest Place
Washington, MO 63090
314-239-7500

Short, Howard N OPH
800 E 5th St. Suite 301
Washington, MO 63090
314-239-1650

Sincox, Chas H FP
205 Elm
Washington, MO 63090
314-239-7566

Smith, Kenneth B IM
800 E 5th Suite 211
Washington, MO 63090
314-239-7500

---

*Doctor of osteopathy.

082 — GREENE

Steinberger, Robert ORS
P.O. Box 149
Washington, MO 63090
314-239-2900

Tucker, Leslie E IM
800 E. Fifth St. Suite 212
Washington, MO 63090
314-239-7344

Turner, James D FP
800 E. 5th
Washington, MO 63090
314-239-4100

Workman, Geo M FP
Southwest Medical Associates
Route 1, Box 30-1
Hermann, MO 65041
314-486-2118

078 — GRAND RIVER

Boulware, William T IM
103 Eleventh St. 14
Chillicothe, MO 64601
816-646-3800

Cross, Albert D GP
618 E First St
Trenton, MO 64683
816-359-4385

Daley, Frank R GP
207 West Berry
Hamilton, MO 64644

Dixon, John R GS
P. O. Box 2
Brookfield, MO 64628
816-258-3301

Duffy, Oliver F US
Rt 4, Box 118
Trenton, MO 64683

Fair, Wm L FP
170S Calhoun St.
Chillicothe, MO 64601

Gale, Joseph F GP
1710 Polk St.
Chillicothe, MO 64601

Galvez, Sisenando P IM
10S S Kansas
Marceline, MO 64658
816-376-3521

Greenlaw, Cal W IM
Hedrick Office Bldg Suite 16
Chillicothe, MO 64601
816-646-4345

Hall, Terry E FP
P. O. Box 233
2525 Miller
Bethany, MO 64424
816-425-7443

Howell, Billy D GP
12S E. Lockling
Brookfield, MO 64628
816-258-7235

Mandler, George OTO
Hedrick Office Bldg. #9
103 Eleventh St.
Chillicothe, MO 64601
816-646-2847

Nixon, Edward E GP
Gallatin, MO 64640

Patel, Hansa N FP
P. O. Box 506
Bethany, MO 64424
816-425-3150

Patel, Natu B FP
P. O. Box 506
Bethany, MO 64424
816-425-3150

Platz, John H GP
101 S. Main
Carrollton, MO 64633
816-542-0496

Rivera, Minerva M IM
308 N. Main St.
Brookfield, MO 64628
816-258-3324

Rivera, Pepito C GS
308 N Main
Brookfield, MO 64628
816-258-3324

Rose, John F R
2105 Meadow Lane Circle
Chillicothe, MO 64601

Ryan, David FP
902 Custer
Trenton, MO 64683
816-3S9-4317

Seralathan, Ramasamy GS
701 East First Street
Trenton, MO 64683
816-3S9-2218

Smith, Robt W GP
P. O. Box 497
Brookfield, MO 64628
816-258-2294

Szymanski, Stanley R R
Box 366
Macon, MO 63552

Trinidad, Hermanito R GS
103 - 11th St.
Chillicothe, MO 64601
816-646-1780

Yoon, Jin S OBG
103 11th St
Chillicothe, MO 64601
816-646-3746

082 — GREENE

Albritton, Michael A ON
123S E. Cherokee
Springfield, MO 65804
417-836-8926

Alcancia, Elpidio Y TR
3150 S. National
Springfield, MO 65807
417-887-4270

Allen, Jerry H GS
1324 S. Fairway
Springfield, MO 65804
417-881-7131

Allison, James B P
2200 E Sunshine Ste 301
Springfield, MO 65804
417-883-2525

Ancheta, Apolinario A GS
1443 N. Robberson Suite 504
Springfield, MO 65802
417-869-4145

Anderson, Douglas A PTH
1235 East Cherokee
Springfield, MO 65804
417-885-2961

Anderson, Lynn A D
1900 S. National Ste 3800 NW
Springfield, MO 65804
417-882-2277

Andrews, Elizabeth J PD
1965 S. Fremont #2900
Springfield, MO 65804
417-881-2151

Andrews, Paul E IM
1965 S. Fremont Suite 1500
Springfield, MO 65804
417-882-1822

Anthony, Dallas D R
1322 South Pickwick
Springfield, MO 65804
417-862-9776

Armstrong, Stephen D RHU
P. O. Box 9007
Springfield, MO 65808
417-885-7120

Arnold, Paul N OPH
1965 S. Fremont Ste 2700
Springfield, MO 65804
417-886-3937

Ash, Charles J ORS
1443 N Robberson Suite 308
Springfield, MO 65802
417-836-8800

Ashley, Michael E GS
3231 South National
Springfield, MO 65807
417-883-7422

Ashley, Thos E GS
3231 South National
Springfield, MO 65807
417-883-7422

Atkinson, Lance D FP
626 E. Battlefield
Springfield, MO 65807
417-881-2180

Atwood, Steven D IM
3443 S. National
Springfield, MO 65807
417-883-3443

Auner, Cecil R IM
Family Pract Residency Prog
1443 N. Robberson #802
Springfield, MO 65802
417-836-8787

Avery, David M TS
3231 S. National
Springfield, MO 65807
417-883-7422

Axness, Mark E AN
1000 E. Primrose St. #520
Springfield, MO 65807
417-88S-4550

Back, Donald K IM
3231 South National
Springfield, MO 65807
417-883-7422

Bagby, Jack M AN
1900 South National #1800
Springfield, MO 65804
417-887-6323

Bailey, Alan H PUD
2242 Barataria
Springfield, MO 65804

Baldwin, Richard M OBG
1000 E. Primrose Suite 440
Springfield, MO 65807
417-885-6262

Barnhill, Floyd R OTO
1965 S. Fremont #1950
Springfield, MO 65804
417-887-5750

Bartlett, John E DR
1443 N. Robberson Ste. 208
Springfield, MO 65802
417-865-5521

Bartley, Richard L FP
719 W. Katella Court
Springfield, MO 65807
417-883-2225

Bell, Laird A OBG
1900 S. National #2960NW
Springfield, MO 65804
417-887-5500

Benedett, Robert E OPH
1965 S. Fremont Suite 2000
Springfield, MO 65804
417-887-1965

Bennett, Robert U ORS
1900 S. National
Suite 1950
Springfield, MO 65804
417-882-1900

Benson, Ronald G OBG
1000 E. Primrose, Suite 200
Springfield, MO 65807
417-887-0966

Bentley, John D IM
1900 S National
Suite 2200
Springfield, MO 65804
417-887-4000

Berner, Carol T FP
1900 S. National Suite 2800
Springfield, MO 65804
417-881-8818

Berry, Paul T FP
2135 Shady Glen
Springfield, MO 65804
417-883-6290

Best, John F CD
3231 South National
Springfield, MO 65807
417-883-7422

Blades, Ross D U
3231 S. National
Springfield, MO 65807
417-883-7422

Blaine, James R EM
Smith-Glynn-Callaway Clinic
3231 S. National
Springfield, MO 65807
417-883-7422

Bonebrake, Albert J OBG
1900 South National
Suite 2960 NW
Springfield, MO 6S804
417-887-5500

Bonebrake, Mac D OBG
1900 S National #2960NW
Springfield, MO 65804
417-887-5500

Boone, Martin H AN
Rt. 2 Box 315
Springfield, MO 65802
417-869-3997

Boone, Vicky L OBG
1965 S. Fremont Suite 1800
Springfield, MO 65804
417-887-7887

Borja, Egbert R IM
3525 S. National Suite 101
Springfield, MO 65807
417-886-8264

Borup, Jerrell L AN
1000 E. Primrose St. #520
Springfield, MO 65807
417-885-4550

Brabson, John H PUD
3231 S. National
Springfield, MO 65807
417-883-7422

Brent, Lanny R DR
1443 N. Robberson, Ste. 208
Springfield, MO 65802
417-865-5521

Brian, Wm J AN
1900 S. National #1800
Springfield, MO 65804
417-887-6323

Briggs, Thomas B N
1965 S. Fremont Ste 3700
Springfield, MO 6S804
417-887-6880

Bright, James E P
1965 South Fremont
Suite 2100
Springfield, MO 65804
417-882-3000

•Doctor of osteopathy.

Broaddus, Loren E IM
P. O. Box 9007
Springfield, MO 65808
417-885-7220

Brockman, M. Douglas IM
1965 S. Fremont
Springfield, MO 65804
417-887-1771

Brooks, John E N
Rt. 3, Box 191
Rogersville, MO 65742
417-881-6620

Brown, James T GS
3733 E. Monroe
Springfield, MO 65809
417-863-6861

Brown, David W ORS
1900 S. National
Suite 1980 NW
Springfield, MO 65804
417-882-6040

Brownsworth, Ronnie D N
3231 S. National Ave.
Springfield, MO 65807
417-883-7422

Bult, Mark J AN
1000 E. Primrose St. #520
Springfield, MO 64807
417-885-4550

Burkey, Jordan W OTO
1000 East Primrose Suite 360
Springfield, MO 65807
417-887-9900

Busiek, Paul J PD
Rt 9
Springfield, MO 65809

Bussmann, Donald W U
3231 S. National
Springfield, MO 65807
417-883-7422

Bussmann, Yvonne L PD
3231 S. National
Springfield, MO 65807
417-883-7422

Cady, Roger K FP
1328 E. Evergreen
Springfield, MO 65803
417-865-5940

Caldwell, Joseph L A
3231 South National
Springfield, MO 65807
417-883-7422

Callaway, Guy D IM
901 E. Portland
Springfield, MO 65807

Canlas, Mario P NS
1965 S. Fremont Ste. 2500
Springfield, MO 65804
417-882-5216

Carlton, Lynn N DR
Ozarks Radiology Group LTD
P. O. Box 4763 GSS
Springfield, MO 65808
417-883-3727

Carolla, Robert L ONC
1900 South National
Suite 3600 NW
Springfield, MO 65804
417-882-4880

Carr, Phillip W CD
3231 South National
Springfield, MO 65807
417-883-7422

Ceaser, James H CD
P. O. Box 9007
Springfield, MO 65808
417-885-7210

Ceaser, Nancy H PD
1000 E. Primrose Ste. 140
Springfield, MO 65807
417-885-6184

Chase, Larry K IM
1000 E. Primrose, Suite 400
Springfield, MO 65807
417-885-4450

Christensen, Harold L IM
P. O. Box 9007
Springfield, MO 65808
417-885-7210

Christiansen, Stephen D GS
1900 S. National Ste #2800
Springfield, MO 65804
417-881-8819

Christy, Raymond A PD
1111 S Glenstone Suite 3-102
Springfield, MO 65804
417-862-0650

Christy, Richard R P
1965 Fremont Ave. Suite 2650
Springfield, MO 65804
417-881-4949

Clarke, Michael J GS
3530 E. Catalpa
Springfield, MO 65809

Clarke, Michael S ORS
1900 S. National
Suite 1950
Springfield, MO 65804
417-882-1900

Clary, Wm F P
1722-C S. Glenstone
Springfield, MO 65804
417-881-3124

Clayton, Edgar L PDA
2446 Brentwood Ave.
Springfield, MO 65804
417-881-1283

Clouse, John W ONC
Cox Cancer Center
1423 North Jefferson
Springfield, MO 65802
417-836-3436

Cochran, Thos E IM
3231 South National
Springfield, MO 65807
417-883-7422

Collins, Douglass D PD
1000 E. Primrose Suite 560
Springfield, MO 65807
417-882-1600

Collison, R Michael FP
Smith-Glynn Callaway Clinic
2619 North Kansas
Springfield, MO 65803
417-831-8074

Conrad, Raymond C OBG
1338 S. Delaware
Springfield, MO 65804

Cook, James R AN
1900 South National #1800
Springfield, MO 65804
417-887-6323

Cooper, C Wesley CD
3231 South National
Springfield, MO 65807
417-883-7422

Cordonnier, James K GS
P. O. Box 9007
Springfield, MO 65808
417-885-7230

Corry, Francis M GS
3231 South National
Springfield, MO 65807
417-883-7422

Coscia, Robert L GS
1900 S. National Suite 2300
Springfield, MO 65804
417-887-4776

Coulter, James W PUD
P. O. Box 9007
Springfield, MO 65808
417-885-7160

Cox, W. Welby ONC
1900 S. National Ste. 3600NW
Springfield, MO 65804
417-882-4880

Crawford, Oral B AN
1900 South National #1800
Springfield, MO 65804
417-887-6323

Crighton, John C GS
1900 S. National Suite 2300
Springfield, MO 65804
417-887-4776

Crighton, M. Nanette AN
1000 E. Primrose #520
Springfield, MO 65807
417-885-4550

Crosthwait, Edward L GP
1630 N. Jefferson Ave.
Springfield, MO 65803
417-883-9100

Cunningham, D. Dean GP
1425 S. Delaware
Springfield, MO 65804
417-866-6956

Cunningham, Richard D IM
1965 S. Fremont #1500
Springfield, MO 65804
417-882-1822

Cunningham, William F ONC
1900 S. National
Suite 3600 North Wing
Springfield, MO 65804
314-882-4880

Curry, Stephan R AN
4247 E. Churchill Rd.
Springfield, MO 65809
417-865-4637

Daily, James M AN
1000 E. Primrose Suite 520
Springfield, MO 65807
417-885-4550

Danielsson, Ernst P PS
2900 S. National
Springfield, MO 65804
417-886-5300

Davis, Thomas P IM
P. O. Box 9007
Springfield, MO 65808
417-881-1100

Deckard, Shelby W IM
1965 S. Fremont #1500
Springfield, MO 65804
417-882-1822

Decker, Albert I IM
1215 S. Delaware
Springfield, MO 65804
417-831-6718

DeLeeuw, Karel A MFS
3231 S. National
Springfield, MO 65807
417-883-7422

Dexter, J. Kent IM
1965 S. Fremont #3500
Springfield, MO 65804
417-887-1771

Dillard, Erin M ORS
1900 S. National
Suite 1980 NW
Springfield, MO 65804
417-882-6040

Dills, Joseph N GS
500 Green Tree Road
Rolla, MO 65401
314-364-4658

Dix, Patricia M OBG
1000 E. Primrose #170
Springfield, MO 65807
417-885-4037

Domann, Darrel D PS
2900 S. National
Springfield, MO 65804
417-886-5300

Druet, Robert L CLP
1235 E. Cherokee
Pathology Dept
Springfield, MO 65804
417-885-2000

Duda, Ralph J END
3231 S. National
Springfield, MO 65807
417-883-7422

Duensing, George F PTH
1000 E. Primrose Suite 130
Springfield, MO 65807
417-885-4646

Duff, James E IM
1965 S. Fremont #3500
Springfield, MO 65804
417-887-1771

Duncan, Robt D GS
1234 E. Loren
Springfield, MO 65804

Duncan, Douglas M ORS
P. O. Box 9007
Springfield, MO 65808
417-885-7170

Egbert, Robert N NM
1443 N. Robberson Ste. 403
Springfield, MO 65802
417-862-6717

Elkins, Ronald F CRS
1601 S. Fort
Springfield, MO 65807
417-864-5080

Ellis, Francis J OBG
1900 S. National
Suite 2960 NW
Springfield, MO 65804
417-887-5500

Ellis, Harry L U
1965 S. Fremont Suite 3100
Springfield, MO 65804
417-882-0300

Ellis, Ronald L AN
Ozark Anesthesia
3660 S. National #350
Springfield, MO 65807
417-881-0750

Ely, Norman B R
1675-J E. Seminole
Springfield, MO 65804
417-881-5033

Evans, Ezra L PD
2457 E Barataria
Springfield, MO 65804
417-883-7495

Farber, Barry S U
1900 S. National #2900
Springfield, MO 65804
417-887-9115

Farley, W. Joe FP
1443 N. Robberson #805
Springfield, MO 65802
417-836-8787

Farthing, Gene W GS
1235 East Walnut St.
Springfield, MO 65802
417-862-6312

Ferguson, John L IM
P. O. Box 9007
Springfield, MO 65808
417-885-7130

---

*Doctor of osteopathy.

Ferguson, John F NS
1965 S. Fremont
Springfield, MO 65804
417-887-6880

Ferguson, John P OBG
1900 S. National #2960 NW
Springfield, MO 65804
417-887-5500

Ferrell, Thos E GS
1525 Meadowmere
Springfield, MO 65804
417-862-3027

Fink, Roger L PTH
1000 E. Primrose #130
Springfield, MO 65807
417-885-4646

Fogle, Philip R OBG
1900 S National
Suite 1500
Springfield, MO 65804
417-887-1646

Foote, Daniel D AN
1900 S. National #1800
Springfield, MO 65804
417-887-6323

Freiman, Paul C CD
3231 S. National
Springfield, MO 65807
417-883-7422

Frewin, Paul R ORS
3525 S. National Ste #210
Springfield, MO 65807
417-882-8437

Froehlich, Thomas W IM
1900 South National #3600NW
Springfield, MO 65804
417-882-4880

Gaska, Walter J PS
3231 South National
Springfield, MO 65807
417-883-7422

Gentry, Jim FP
1301 South Glenstone
Springfield, MO 65804
417-831-7399

Gentry, Michael A D
1722K S. Glenstone
Springfield, MO 65804
417-883-8162

Gerdes, John A PTH
1235 E. Cherokee
Springfield, MO 65804
417-885-2873

Gerdes, K. Eric R
1675-J East Seminole
Springfield, MO 65804
417-881-5033

Gerecht, Wolfe B ID
P. O. Box 9007
Springfield, MO 65808
417-885-7300

German, Walter A OBG
3231 South National
Springfield, MO 65807
417-883-7422

Gessler, James A OPH
3231 S. National
Springfield, MO 65807
417-883-7422

Geter, Rodney K PS
3231 S. National
Springfield, MO 65807
417-883-7422

Gibson, James D GS
P. O. Box 9007se
Springfield, MO 65808
417-885-7240

Giddings, Frank C DR
1211 S Pickwick
Springfield, MO 65804
417-862-4834

Gill, Paul J IM
3231 South National
Springfield, MO 65807
417-883-7422

Glazzard, Charles D P
1235 Cherokee
Springfield, MO 65804
417-885-3298

Golden, Samuel E PD
1965 S. Fremont Suite 1900
Springfield, MO 65804
417-886-9102

Good, Michael W FP
3422 E. Lomita St.
Springfield, MO 65804
417-882-6628

Goodman, Douglas E R
1675-J E. Seminole
Springfield, MO 65804
417-881-5033

Goodwin, J. Wendall IM
3231 South National
Springfield, MO 65807
417-883-7422

Gose, Don F CRS
P. O. Box 9007
Springfield, MO 65807
417-885-7230

Gotti, Edward W NM
1500 E. Sunshine Ste. F
Springfield, MO 65804
417-887-1320

Grace, Steve OBG
1900 S. National #2960NW
Springfield, MO 65804
417-887-5500

Grant, Ruth HEM
1900 S National
Suite 3600 NW
Springfield, MO 65804
417-882-4880

Graves, Kathleen L OBG
1965 S. Fremont #1800
Springfield, MO 65804
417-887-7887

Griesemer, Bernard A PD
3014J E Sunshine
Springfield, MO 65804
417-887-0727

Gurian, Lawrence E GE
P. O. Box 9007
Springfield, MO 65808
417-885-7260

Gwin, Edward IM
P. O. Box 9007
Springfield, MO 65808
417-885-7160

H'Doubler, Charles GS
1443 N. Robberson Ste. 705
Springfield, MO 65802
417-831-4833

H'Doubler, Francis T GS
1900 S. National #2950
Springfield, MO 65804
417-882-3066

H'Doubler, Peter B GS
1965 S. Fremont #2300
Springfield, MO 65804
417-882-9400

Habiger, Thomas G N
3231 S. National
Springfield, MO 65807
417-883-7422

Hacker, Douglas A NR
1675-J East Seminole
Springfield, MO 65804
417-881-5033

Hackett, Earl R N
1965 S. Fremont #2800
Springfield, MO 65804
417-881-5590

Haddow, Alastair D ID
1900 S. National Suite 2200
Springfield, MO 65804
417-887-4000

Hall, David W FP
1721 S. Meadowview
Springfield, MO 65804
417-883-3758

Hall, Durward G GS
2442 S Fremont
Springfield, MO 65804
417-881-2515

Halverson, Larry W FP
1443 N. Robberson, Ste. 802
Springfield, MO 65802
417-836-8787

Hamburg, Frederic L PD
1000 E. Primrose Suite 560
Springfield, MO 65807
417-882-1600

Hanks, Michael S PD
1000 E. Primrose Suite 320
Springfield, MO 65807
417-881-6688

Hanss, Armand W IM
642 S Mission
Springfield, MO 65809
417-869-3774

Hardman, William A GS
1443 N. Robberson Ste 904
Springfield, MO 65802
417-836-3800

Hargis, James L PUD
3231 South National
Springfield, MO 65807
417-883-7422

Harmon, Ben C ORS
3231 South National
Springfield, MO 65807
417-883-7422

Harris, Hugh G ORS
1900 S. National Suite 1950
Springfield, MO 65804
417-882-1900

Harvey, Harold D PS
1443 N. Robberson #205
Springfield, MO 65802
417-831-0400

Harvey, Judith E OPH
1443 N. Robberson Suite 501
Springfield, MO 65802
417-865-2227

Hasler, Galen R ONC
3231 South National
Springfield, MO 65807
417-883-7422

Hawkins, Calvin D R
1675-J East Seminole
Springfield, MO 65804
417-881-5033

Hayes, Stanley P IM
3231 South National
Springfield, MO 65807
417-883-7422

Heinz, George PUD
1900 S National #2200
Springfield, MO 65804
417-887-4000

Hellam, Duane C IM
1965 S. Fremont #3500
Springfield, MO 65804
417-887-1771

Henry, Roy A PD
3231 South National
Springfield, MO 65807
417-883-7422

Herfkens, Kenneth D IM
1900 S National Ste 2200
Springfield, MO 65804
417-887-4000

Hill, Randy C OBG
1000 E. Primrose Ste 200
Springfield, MO 65807
417-887-0966

Hills, Joe E CD
P. O. Box 9007
Springfield, MO 65808
417-885-7200

Hinds, Paul A OBG
Rt 5 Box 532
Springfield, MO 65803

Hoeman, Michael D IM
3443 S. National
Springfield, MO 65807
417-883-3443

Holand, Roy W ORS
P. O. Box 9007
Springfield, MO 65808
314-885-7110

Holland, Robt D PD
3231 South National
Springfield, MO 65807
417-883-7422

Hollis, Richard W AN
1900 South National #1800
Springfield, MO 65804
417-887-6323

Holmes, David R OBG
3259 E. Sunshine Ste N
Springfield, MO 65804
417-881-1337

***Honderick, Richard T** FP
1965 S. Fremont #2850
Springfield, MO 65804
417-881-4455

Hoos, Gary L ONC
1900 S. National Ste 3600NW
Springfield, MO 65804
417-882-4880

Horton, Bill G OPH
1900 S. National #1400
Springfield, MO 65804
417-887-5400

Horton, James D ORS
1235 E Delmar
Springfield, MO 65804
417-869-3041

Hover, Alexander R GE
3231 South National
Springfield, MO 65807
417-883-7422

Howitt, William J GP
440 Market
Springfield, MO 65806
417-865-5581

Hrnicek, Gary E IM
1000 E. Primrose Suite 540
Springfield, MO 65807
417-882-7252

Hubbard, Sally L FP
SMSU Student Health Center
901 S. National
Springfield, MO 65804
417-836-5540

Huewe, Douglas A D
1900 S. National
Suite 3800 NW
Springfield, MO 65804
417-882-2277

Hufft, Robert E ORS
1900 S. National #1950
Springfield, MO 65804
417-882-1900

Hulstra, Johannes F P
3231 South National
Springfield, MO 65807
417-883-7422

---

*Doctor of osteopathy.

Husted, Frederick C IM
P. O. Box 9007
Springfield, MO 65808
417-885-7150

Ippensen, John H OTO
1965 S. Fremont Suite 1950
Springfield, MO 65804
417-887-5750

Ivy, H. B. OPH
435 E. Seminole
Springfield, MO 65807
417-886-9117

Jahanian, Iraj GP
1949 E. Sunshine Corp Centre
Bldg 2, Ste.111
Springfield, MO 65804
417-887-3006

Jameson, James E ORS
3535 E. Cinnamon Place
Springfield, MO 65809

Janeczko, Gregory F AN
1900 South National #1800
Springfield, MO 65804
417-887-6323

Jary, Mark L FP
1106 West Jackson
Ozark, MO 65721
417-485-3548

Jobe, Chas L IM
3231 South National
Springfield, MO 65807
417-883-7422

Johnson, Warford B IM
2244 East Edgewood
Springfield, MO 65804

Johnson, Wm F U
1965 S. Fremont
Springfield, MO 65804
417-882-0300

Johnson, Fritz M TS
1965 S. Fremont Ave.
Suite 1200
Springfield, MO 65804
417-887-5220

Johnson, Jeffrey R U
1965 S. Fremont Suite 3100
Springfield, MO 65804
417-882-0300

Johnson, Jos C OBG
3231 S. National
Springfield, MO 65807
417-883-7422

Johnson, Robert D U
1965 S. Fremont #3100
Springfield, MO 65804
417-882-0300

Johnson, Warford B IM
P. O. Box 9007
Springfield, MO 65808
417-885-7370

Johnston, Jos L OBG
2855 Southern Hills Blvd.
Springfield, MO 65804
417-881-2323

Jones, Harold L IM
P. O. Box 9007
Springfield, MO 65808
417-885-7150

Jones, Laird E P
1740 S. Glenstone, Suite I/J
Springfield, MO 65804
417-881-8088

Kelling, E. Collyer DR
1675-J East Seminole
Springfield, MO 65804
417-881-5033

Kensel, Robert S EM
1423 N. Jefferson
Springfield, MO 65802
417-836-3193

Kesssinger, William A PD
3231 S. National Ave.
Springfield, MO 65807
417-883-7422

Key, James S D
1900 S. National #3900 NW
Springfield, MO 65804
417-882-2194

Khalil, Tamer G IM
3525 S. National Ste. 206
Springfield, MO 65807
417-883-6651

Kim, S. Brian IM
1001 East Primrose
Springfield, MO 65807
417-885-7114

Kimbrough, Robert C ID
P. O. Box 9007
Springfield, MO 65808
417-881-1100

Kinder, Doyle O FP
3231 South National
Springfield, MO 65807
417-883-7422

Kipfer, Robt E GE
P. O. Box 9007
Springfield, MO 65808
417-885-7250

Kissell, Richard W IM
3443 S. National
Springfield, MO 65807
417-883-3443

Klingner, Geo M IM
P. O. Box 35
Turners, MO 65765

Klinkerfuss, Geo H N
1000 E. Primrose Suite 310
Springfield, MO 65807
417-886-0005

Knabb, Henry F GP
Rt 16 Box 140
Springfield, MO 65807
417-865-1464

Knabb, Kenneth E FP
1229 E. Catalpa
Springfield, MO 65804
417-836-8100

Knowlton, Norman P IM
1965 S. Fremont #3500
Springfield, MO 65804
417-887-1771

Kobbermann, Kobby J OBG
1965 S. Fremont Suite 2600
Springfield, MO 65804
417-882-2919

Kolze, Vernon W GS
633-C South Hickory
Springfield, MO 65809
417-881-7128

Krahn, Henry C R
1443 N. Robberson Ste. 208
Springfield, MO 65802
417-865-5521

Kryshak, Edward J End
3231 S. National
Springfield, MO 65807
417-883-7422

LaFerriere, Keith A OTO
1965 S. Fremont, Suite 1990
Springfield, MO 65804
417-887-5750

Lampert, Benjamin A AN
1900 S. National #1800
Springfield, MO 65804
417-887-7458

LeFevre, Philip J P
1965 S. Fremont
Springfield, MO 65804
417-883-5141

Leitch, Steven M IM
3231 S. National
Springfield, MO 65807
417-883-7422

Lewis, Noel R PTH
2900 S. National
Springfield, MO 65804
417-882-2900

Lin, Chi-Hsi N
3259-K East Sunshine
Springfield, MO 65804
417-883-8796

Litton, Lyle D DR
3044 Shalimar Drive
Springfield, MO 65804
417-881-1177

Lockhart, Charles E GS
1211 S. Glenstone #401
Springfield, MO 65804
417-869-9139

Loeb, Richard H IM
3231 South National
Springfield, MO 65807
417-883-7422

***Logston, David G** AN
1000 E. Primrose #520
Springfield, MO 65807
417-885-4550

Lombardo, Richard J EM
3535 S. National
Springfield, MO 65807
417-882-1779

Long, Stephen E NM
1235 E. Cherokee Dept of NM
Springfield, MO 65804
417-885-3021

Lorenc, Ernest D
1900 S. National
Suite 3800 NW
Springfield, MO 65804
417-882-2277

Lowe, H. Arch GS
1443 N Robberson #303
Springfield, MO 65802
417-866-7249

Ludwig, William D R
1443 N Robberson Suite 208
Springfield, MO 65802
417-865-5521

Lundman, Hugh GS
1965 S. Fremont #1300
Springfield, MO 65804
417-882-4800

Lurie, Harold H IM
3443 S. National
Springfield, MO 65807
417-883-3443

Luzecky, Michael H N
1965 S. Fremont #2800
Springfield, MO 65804
417-881-5590

Lynch, Thos W D
1900 S. National #3100
Springfield, MO 65804
417-883-0500

Lyons, Daniel F IM
1000 E. Primrose, Suite 400
Springfield, MO 65807
417-885-4450

***Magill, William S** OBG
1900 S. National #2500
Springfield, MO 65804
417-886-8898

Maher, Robt W GS
924 E. Linwood Dr.
Springfield, MO 65807

Major, Troy E D
1000 E. Primrose #340
Springfield, MO 65807
417-881-7220

Mantell, Jack M IM
P. O. Box 9007
Springfield, MO 65808
417-885-7270

Maple, Francis M GE
3231 South National
Springfield, MO 65807
417-883-7422

Mattax, James B OPH
1000 E. Primrose Suite 420
Springfield, MO 65807
417-886-2420

Mauldin, Charles C PMR
1000 E. Primrose Suite 310
Springfield, MO 65807
417-885-4545

Mayus, Joseph L IM
P. O. Box 9007
Springfield, MO 65808
417-885-7120

McAfee, Gordon P
5335 S. Campbell Suite A
Springfield, MO 65810
417-887-7780

McAlhany, Howard J NS
1643 East Catalpa
Springfield, MO 65804
417-865-4578

McCorcle, Marcus D OBG
1000 E. Primrose, Suite 270
Springfield, MO 65807
417-882-6900

McCray, Glen M CHP
1324 S. Raintree Place
Springfield, MO 65809

McKinney, Daniel C PD
1965 S. Fremont Ste. 2200
Springfield, MO 65804
417-887-0711

McLaughlin, Richard D OBG
1000 E. Primrose, Suite 270
Springfield, MO 65807
417-882-6900

McMurray, Scott W ORS
3231 S. National
Springfield, MO 65807
417-883-7422

McNeal, Douglas M PD
3014J E. Sunshine
Springfield, MO 65804
417-887-0727

McQueary, Frederick G ORS
1900 S National
Suite 1980 NW
Springfield, MO 65804
417-882-6040

Mehlhorn, Gary L OPH
1965 S. Fremont
Springfield, MO 65804
417-887-1965

Meldi, Dominic M IM
3231 South National
Springfield, MO 65807
417-883-7422

Menchetti, Donald E FP
1630 N Jefferson Suite 3
Springfield, MO 65803
417-866-6619

Mendez, Maria A P
1965 S. Fremont Ste 1400
Springfield, MO 65804
417-881-8375

Mentgen, Carl N GE
P. O. Box 9007
Springfield, MO 65808
417-885-7250

---

*Doctor of osteopathy.

082 — GREENE

Meyer, John W PD
3014G E Sunshine
Springfield, MO 65804
417-887-1504

Michaels, Robert H OPH
1900 S National
Suite 1400
Springfield, MO 65804
417-887-5400

Mihalevich, John A IM
1900 S. National #3400
Springfield, MO 65804
417-887-7002

Miles, Wayne B A
1200 East Woodhurst
Bldg. K Ste 300
Springfield, MO 65804
417-887-1188

Milne, Jay L U
1900 S. National #2700
Springfield, MO 65804
417-887-2090

Mire, Louis E EM
1235 E. Cherokee
Springfield, MO 65804
417-885-2115

Mizell, Myron W CD
1965 S. Fremont Suite 2950
Springfield, MO 65804
417-882-1984

Mohsen, Aly M PM
1965 S. Fremont, Ste. 3600
Springfield, MO 65804
417-887-0100

Molberg, Peter J FP
1443 N. Robberson St. #803
Springfield, MO 65802
417-836-8787

Moore, De Armond OM
2306 Meadowview
Springfield, MO 65804
417-883-3572

Morgan, Charles H IM
3231 S. National
Springfield, MO 65807
417-883-7422

Morgan, John L DR
3525 S. National
Springfield, MO 65807
417-887-8790

Morrison, Stephen K CDS
P. O. Box 9007
Springfield, MO 65808
417-885-7370

Morrow, N. Eugene D
1900 S. National Ave.
Suite 3800 NW
Springfield, MO 65804
417-882-2277

Morton, Paul C IM
1608 Arlington Road
Springfield, MO 65807
417-881-7011

Moseley, F. Thomas GS
1965 S. Fremont #1300
Springfield, MO 65804
417-882-4800

Muegge, F. David IM
1000 E. Primrose #540
Springfield, MO 65807
417-882-7252

Myears, Donald W CD
3231 S. National
Springfield, MO 65804
417-883-7422

Nachtigal, Michael P ORS
1900 S. National Suite 1980
Springfield, MO 65804
417-882-6040

Neal, James G P
1721 Elfindale Suite 301
Springfield, MO 65807
417-863-8819

Neblett, Lewis M ENT
Rt. 2, Box 519
Rogersville, MO 65742
417-883-0779

Nelson, David E DR
1443 N. Robberson, Ste. 208
Springfield, MO 65802
417-865-5521

Nelson, Donald C IM
1900 S. National Suite 2200
Springfield, MO 65804
417-887-4000

Neu, Leo T OPH
1000 E. Primrose Suite 420
Springfield, MO 65807
417-886-2420

Neu, Leo T HEM
3231 S. National
Springfield, MO 65807
417-883-7422

Olive, G. Chapman GS
1900 S. National Suite 2300
Springfield, MO 65804
417-887-4776

Olson, E. Rule OPH
1900 S National Ste 1400
Springfield, MO 65804
417-887-5400

Olson, Robert J DR
3050 S. National #106
Springfield, MO 65804
417-883-8223

Otto, William J OBG
3231 S. National
Springfield, MO 65807
417-883-7422

Ovens, Lisa IM
3231 S. National
Springfield, MO 65807
417-883-7422

Overend, Don S PD
3231 South National
Springfield, MO 65807
417-883-7422

Pacheco, Jose M R
5657 S. Roanoke
Springfield, MO 65810
417-887-6414

Palcheff, Chris L PD
1722-SS S. Glenstone
Springfield, MO 65804
417-881-6300

Park, Wm I IM
1470 S. Virginia
Springfield, MO 65807
417-866-6614

Park, Bert E NS
1965 S. Fremont Suite 3700
Springfield, MO 65804
417-887-6880

Parsons, Clyde W ORS
1900 S. National #1980 NW
Springfield, MO 65804
417-882-6040

Pearman, Carl C OBG
1443 North Robberson #802
Springfield, MO 65802
417-836-8787

Penninger, William H ORS
2246 E. Claiborne
Springfield, MO 65804
417-881-5646

Petersen, Larry D AN
1000 E. Primrose Ste 520
Springfield, MO 65807
417-885-4550

Peterson, Craig A OPH
3231 S. National
Springfield, MO 65807
417-883-7422

Peterson, Stanley S IM
721 E. Stanford
Springfield, MO 65807
417-883-0371

Piker, K. Dewayne FP
1443 N. Robberson, Ste. 905
Springfield, MO 65802
417-836-3555

Pinckley, James N CD
3231 South National
Springfield, MO 65807
417-883-7422

Podrecca, Guido I PTH
2925 Chambery
Springfield, MO 65804

Potts, Fred E AN
3525 S. National Suite 110
Springfield, MO 65807
417-882-4605

Powell, Edwin M U
1965 S. Fremont
Springfield, MO 65804
417-882-0300

Powell, Kenneth R IM
P. O. Box 9007
Springfield, MO 65808
417-885-7310

Powell, Lisa G OBG
1900 S. National Ste 2960 NW
Springfield, MO 65804
417-887-5500

Prater, Bill G OPH
1965 S. Fremont
Springfield, MO 65804
417-887-1965

Prater, Kimberley A R
1443 N. Robberson Suite 208
Springfield, MO 65802
417-865-5521

Prater, Thomas G OPH
1965 S. Fremont Suite 2000
Springfield, MO 65804
417-887-1965

Presley, Jimmy C FP
1301 S. Glenstone
Springfield, MO 65804
417-831-7399

Previti, Vincent GS
1965 S. Fremont Suite 2250
Springfield, MO 65804
417-881-3428

Pruett, Paul L OBG
Rt. 9 Box 425
Springfield, MO 65809
417-881-8613

Quinn, Paul S PTH
Rt. Box 181-E
Strafford, MO 65757
417-736-3222

Quinn, Rodney D N
P. O. Box 9007
Springfield, MO 65807
417-885-7360

Raborar, Arteso C CLP
2900 S. National
Springfield, MO 65804
417-882-2900

Randolph, Kerry A IM
3443 S. National
Springfield, MO 65807
417-883-3443

Redfern, David L OBG
1900 S. National Suite 2960
Springfield, MO 65807

Redmon, Conchita M IM
James Rice Clinic
720 W. Mt. Vernon
Nixa, MO 65714
417-725-4900

Reese, Jon A GS
3231 S. National
Springfield, MO 65807
417-883-7422

Reyes, Efraim FP
3405 Mt. Vernon St.
Springfield, MO 65802
417-865-5667

Reyes, Lirio M PD
3525 S. National #204
Springfield, MO 65807
417-883-2311

Rice, Kathleen G PD
Children's Apnea Services
1235 E. Cherokee
Springfield, MO 65804
417-885-3106

Rising, Dean R PD
3231 South National
Springfield, MO 65807
417-883-7422

Robinson, Gary L OBG
1000 E. Primrose, Suite 200
Springfield, MO 65807
417-887-0966

Rogers, David B ORS
1900 S. National Ave. #1950
Springfield, MO 65804
417-882-1900

Rogers, James D TS
1965 S. Fremont Ave.
Suite 1200
Springfield, MO 65804
417-887-5220

Rogers, James T IM
1900 S. National Suite 3400
Springfield, MO 65804
417-887-7002

Rogers, Joseph Drewry TR
1900 S. National
Suite 1960 NW
Springfield, MO 65804
417-882-9960

Roselman, Michael J CD
1965 S. Fremont, Ste. 2950
Springfield, MO 65804
417-882-1984

Rosen, William K FP
1443 N. Robberson Ste 700
Springfield, MO 65802
417-836-3858

Ruff, Paul G CD
3231 South National
Springfield, MO 65807
417-883-7422

Ryan, Robert A GP
309 Ashley Way G1
Pharr, TX 78577

Sammon, T James PD
3014J E. Sunshine
Springfield, MO 65804
417-887-0727

Sanchez, Jon J ORS
3525 S. National Suite 210
Springfield, MO 65807
417-882-8437

Sauer, James M DR
1675-J E. Seminole
Springfield, MO 65804
417-881-5033

---

*Doctor of osteopathy.

Sauer, Paul E TS
1000 E. Primrose Suite 330
Springfield, MO 65807
417-887-6866

***Scanlon, Robert C** U
1443 N. Robberson Ste 900
Springfield, MO 65802
417-836-3862

Schaeffer, Edward M OPH
2356 Wildwood Circle
Springfield, MO 65804

Schane, Catherine L AN
2058 E. Briar
Springfield, MO 65804
417-886-0022

Schneider, J. Michael AN
1900 S. National Ste. 1800
Springfield, MO 65804
417-887-6323

Schoonmaker, Gene D
3231 S. National
Springfield, MO 65807
417-883-7422

Schreiber, Norman J GP
504 Longmeadow Cr.
St. Charles, IL 60174

Schroff, Carle E FP
1630 N Jefferson St
Springfield, MO 65803
417-866-6619

Schwartz, Eugene J PD
1315 E. Loren
Springfield, MO 65804

Schwartz, Howard R RHU
P. O. Box 9007
Springfield, MO 65808
417-885-7130

Scott, Jamie A D
3231 S. National Ave.
Springfield, MO 65807
417-883-7422

Scott, Robert W IM
1965 S. Fremont #3500
Springfield, MO 65804
417-887-1771

Scott, Wendell J OPH
3231 S. National
Springfield, MO 65807
417-883-7422

Seagrave, Richard A ORS
3231 South National
Springfield, MO 65807
417-883-7422

Seale, Stuart A FP
1000 E. Primrose Suite 120
Springfield, MO 65807
417-882-8820

Shackter, Bruce I ORS
1508 S. Essex Drive
Springfield, MO 65809

Shaeffer, James T ORS
1900 S. National Ste 1980 NW
Springfield, MO 65804
417-882-6040

Shane, Ramon A TS
1965 South Fremont Ave.
Suite 1200
Springfield, MO 65804
417-887-5220

Shapiro, A. James PD
1000 E. Primrose #350
Springfield, MO 65807
417-885-6350

Shealy, C. Norman NS
1328 E. Evergreen
Springfield, MO 65803
417-865-5940

Shelton, R. Wayne OPH
3231 South National
Springfield, MO 65807
417-883-7422

Shields, Lawrence S FP
SMSU Taylor Health Ctr
901 South National
Springfield, MO 65804
417-836-5540

***Shipman, Wade M** AN
1900 S. National Ste 1800
Springfield, MO 65804
417-887-6323

Shoults, Nicholas F GS
1900 S. National #2300
Springfield, MO 65804
417-887-4776

Shultz, Thomas M OBG
1000 E. Primrose #270
Springfield, MO 65807
417-882-6900

Silsby, Harry D IM
1369 South Fairway Ave
Springfield, MO 65804
417-881-4756

Simpson, Albert P FP
1636 S. Glenstone
Springfield, MO 65804
417-881-6140

***Simpson, Floyd D** P
1200 E. Woodhurst Ste L-100
Springfield, MO 65804
417-886-6067

Slack, Melinda R NPM
1235 E. Cherokee
Springfield, MO 65804
417-885-3219

Smid, Anne A DR
1443 N. Robberson Suite 208
Springfield, MO 65802
417-865-5521

Smid, David M PTH
1000 E. Primrose #130
Springfield, MO 65807
417-885-6021

Snead, William H ORS
1900 S. National Ste 1980NW
North Wing - Suite 1980
Springfield, MO 65804
417-882-6040

Snow, Emasue P
1965 S. Fremont Ste 2960
Springfield, MO 65804
417-887-1192

Snow, Jon F OTO
1000 E. Primrose #360
Springfield, MO 65807
417-887-9900

Snyder, Christopher H PD
1000 E. Primrose Suite 560
Springfield, MO 65807
417-882-1600

Spade, Diana J AN
1900 South National #1800
Springfield, MO 65804
417-887-6323

Spalding, David L OPH
1900 S. National
Ste. 1400
Springfield, MO 65804
417-887-5400

Sponenberg, Don D PD
3231 S. National
Springfield, MO 65807
417-883-7422

Stamatis, John J TS
1965 S. Fremont Ave.
Suite 1200
Springfield, MO 65804
417-887-5220

Stewart, Robt B OPH
1949 E. Sunshine #4-100
Springfield, MO 65804
417-887-6700

Stewart, Wendell FP
1965 S. Fremont Suite 2400
Springfield, MO 65804
417-886-0108

Stufflebam, Robt E IM
1900 S National
Suite 3400
Springfield, MO 65804
417-887-7002

Stuppy, Mark S OBG
1000 E. Primrose Suite 200
Springfield, MO 65807
417-887-0966

Sturtevant, Harwood N R
3935 E. El Dorado
Springfield, MO 65809
417-881-7001

Sullivan, Dan T DR
3525 S. National
Springfield, MO 65807
417-887-8790

Sullivan, John A DR
1443 N. Robberson Suite 208
Springfield, MO 65802
417-865-5521

Sundstrom, Frank D ORS
3525 S. National #210
Springfield, MO 65807
417-882-8437

Suva, Morfeo M IM
3525 S. National Ste. 111
Springfield, MO 65807
417-887-5519

Sweeney, Thos P DR
1675-J East Seminole
Springfield, MO 65804
417-881-5033

Sweet, Robert A END
1000 E. Primrose Suite 400
Springfield, MO 65807
417-885-4450

Taylor, William K IM
3231 S. National Ave.
Springfield, MO 65807
417-883-7422

Taylor, Wm E GP
350 John Q Hammons Pkwy
Springfield, MO 65806
417-831-3126

Tendai, Mark M OBG
1443 N. Robberson Ste. 904
Springfield, MO 65802
417-836-3860

Terry, James F U
1965 S. Fremont
Springfield, MO 65804
417-882-0300

Tesmer, Timothy A OTO
1965 S. Fremont Suite 1950
Springfield, MO 65804
417-887-5750

Thomasson, David D PD
1443 N. Robberson Ste. 508
Springfield, MO 65802
417-862-6606

Tombridge, Thomas L PTH
1235 E Cherokee
Springfield, MO 65804
417-885-2874

Trotter, W. Yates IM
1900 S. National Ste 2200
Springfield, MO 65804
417-887-4000

Troxil, Elizabeth B PM
P.O. Box 4807
Springfield, MO 65808

Tsang, John L NS
P.O.Box 3816
Springfield, MO 65808

Turner, Glenn O IM
1965 S. Fremont #3200
Springfield, MO 65804
417-881-2244

Tyndall, Robert J N
1000 E. Primrose #310
Springfield, MO 65807
417-886-0005

Vale, Janie R OM
3231 S. National Ave.
Springfield, MO 65807
417-883-7422

Van Osdol, Kelvin D CD
1965 S. Fremont #2950
Springfield, MO 65804
417-882-1984

Wachter, Ronald M PTH
1000 E. Primrose #130
Springfield, MO 65807
417-885-6021

Waddell, Kenneth E OBG
3231 S. National
Springfield, MO 65807
417-883-7422

Wade, Larry A P
1900 S. National Suite 3300
Springfield, MO 65804
417-887-1984

Wakeman, Newt ORS
1443 N. Robberson Ste 1001
Springfield, MO 65802
417-836-3861

Walker, Gary K OBG
1000 E. Primrose, Suite 270
Springfield, MO 65807
417-882-6900

Walker, Melvin O IM
1900 S. National Ste. 2950
Springfield, MO 65804
417-887-4000

Walker, William M OBG
1000 E. Primrose, Suite 270
Springfield, MO 65807
417-882-6900

Wall, Norman R PS
2900 S. National
Springfield, MO 65804
417-886-5300

Wantuck, Donald K IM
1900 S. National
Suite 3400
Springfield, MO 65804
417-887-7002

Warres, Herbert L U
2614 S. Inglewood
Springfield, MO 65804

Waterfield, Jim R IM
3231 South National
Springfield, MO 65807
417-883-7422

Watson, Tom F AN
1900 S. National Suite 1800
Springfield, MO 65804
417-887-6323

Waxman, Joel E OTO
3231 S. National
Springfield, MO 65807
417-883-7422

Webb, James P U
1965 S. Fremont Ste 3100
Springfield, MO 65804
417-882-0300

Wheeler, Jeffery EM
Cox North 1423 N. Jefferson
Springfield, MO 65802
417-836-3193

---

*Doctor of osteopathy.

White, R. Ned OBG
1443 N. Robberson, Ste. 301
Springfield, MO 65802
417-831-1512

Whitlock, C. Courtney NS
1443 N. Robberson, Ste 405
Springfield, MO 65802
417-862-0747

Wible, Jerry C OTO
3231 S. National
Springfield, MO 65807
417-883-7422

Williams, John W OBG
1000 E. Primrose, Suite 200
Springfield, MO 65807
417-887-0966

***Wilson, James W** FP
3014-J E. Sunshine
Springfield, MO 65804
417-887-0727

Wilson, Roy E P
1900 S. National
Ste. 3300
Springfield, MO 65804
417-887-6538

***Wilson, W. Timothy** FP
1965 S. Fremont Suite 2975
Springfield, MO 65804
417-883-0023

Winkler, Anne RHU
3231 S. National
Springfield, MO 65807
417-883-7422

Winsky, Arlen D PS
1900 S. National Ste 2970
Springfield, MO 65804
417-887-8870

Wittmer, Marc R GS
P. O. Box 9007
Springfield, MO 65808
417-885-7240

Wittmer, Saml C GS
2056 E. Woodhaven Place
Springfield, MO 65804
417-881-6811

Wolf, Marion L ORS
3231 South National
Springfield, MO 65807
417-883-7422

Wolfe, John E IM
P. O. Box 9007
Springfield, MO 65808
417-885-7160

Wolfe, James B OTO
1000 E. Primrose Ste 360
Springfield, MO 65807
417-887-9900

Wolski, James R DR
1443 N. Robberson #208
Springfield, MO 65802
417-865-5521

Wooldridge, Wilfred E D
1126 E. Stanford
Springfield, MO 65807
417-881-8063

Wooten, Michael B GE
3231 South National
Springfield, MO 65807
417-883-7422

Wright, Andy J OBG
3231 South National
Springfield, MO 65807
417-883-7422

Wyrsch, Leo M OBG
1900 S. National Ste 2960 NW
Springfield, MO 65804
417-887-5500

Zahn, Robt L PD
1965 S. Fremont Suite 2900
Springfield, MO 65804
417-887-8844

086 — HENRY

Jones, Edna M OS
Rt #2
Deepwater, MO 64740
816-885-5585

Kenney, Douglas R FP
Medical Bldg.
Hospital Dr.
Clinton, MO 64735
816-885-8141

King, Richard H GS
Hospital Drive
Medical Clinic
Clinton, MO 64735
816-885-8141

Miller, Harry G ORS
Wetzel Clinic
HWY 13 North
Clinton, MO 64735
816-885-8171

Scott, Kenneth F FP
Medical Building
Hospital Drive
Clinton, MO 64735
816-885-8141

Smith, Wm J GP
103 W. Colt St.
Windsor, MO 65360
816-647-3117

Weltscheff, Christo A GP
Rt 1
Lincoln, MO 65338
816-547-3642

Wetzel, Gus S GS
Wetzel Clinic Hwy. 13 N.
Clinton, MO 64735
816-885-8171

102 — JASPER

Adams, Robert B IM
3103 Mc Clelland Blvd
Joplin, MO 64804
417-781-3100

Al-Shathir, Saad PM
P. O. Box 2161
2727 McClelland Blvd.
Joplin, MO 64803
417-782-4111

Allen, David O U
Rt. 4, Box 26
Joplin, MO 64804
417-623-5044

Beene, Jackie S FP
1206 MacArthur Dr.
Webb City, MO 64870
417-673-5034

Bentlage, Charles H GS
1513 W 32nd St
Joplin, MO 64804
417-781-6844

Bettasso, Bernard F IM
2700 McClelland Blvd.
Suite 311 Bldg C
Joplin, MO 64804
417-624-8823

Bopp, J. Ronald OBG
1030 McIntosh Circle Dr #3
Joplin, MO 64804
417-781-6932

Borello, Dan J OBG
3101 Mc Clelland Blvd.
Joplin, MO 64804
417-624-1714

Brandon, Frederick M R
2609 E. 12th Street
Joplin, MO 64801
417-624-5882

Brigden, Robert B AN
2604 Picher
Joplin, MO 64804
417-623-1211

Burch, John E OBG
122 Moorings Park Dr.
Apartment 208
Naples, FL 33942
813-262-5274

Burleigh, Bruce W ORS
Joplin Orthopaedic Surg Inc.
P. O. Box 2507
Joplin, MO 64803
417-781-2807

Carnes, Victor M PTH
2700 Mc Clelland
Suite 205 Bldg. B
Joplin, MO 64804
417-623-6330

Carter, Robert L HEM
2727 Mc Clelland
Joplin, MO 64804
417-782-6118

Chandramohan, Nanjappa IM
616 W. Centennial
Carthage, MO 64836
417-358-4680

Chapman, Ramona Marie ONC
P. O. Box 2644
3302 Mc Intosh Circle
Joplin, MO 64803
417-782-6630

Chase, Ned B ORS
Joplin Orthopaedic Surg Inc.
P. O. Box 2507
Joplin, MO 64803
417-781-2807

Chellappa, Danu IM
Suite 215 2817 Mc Clelland
Joplin, MO 64804
417-781-9197

Chesney, George W AN
2604 Picher St
Joplin, MO 64804
417-623-1211

Chesney, John W OBG
1002 McIntosh Dr. Ste. 2
Joplin, MO 64804
417-782-3500

Clark, Larry K OBG
3101 McClelland Blvd.
Joplin, MO 64804
417-624-1714

Cohle, Richard R IM
Rt 5, Box 381
Carthage, MO 64836
417-358-4763

Conde, Gary A FP
2601 Cunningham
Joplin, MO 64804
417-781-0836

Corcoran, Francis H CD
P. O. Box 2788
2817 McClelland Blvd.
Joplin, MO 64803
417-781-5387

Cotner, Mark S GS
1002 McIntosh Circle Ste 6
Joplin, MO 64804
417-782-7090

Cox, John M CD
702 E. 34th St. Suite 204
Joplin, MO 64804
417-623-6343

Crispell, Lawrence S OTO
1512 Pelican Point Dr. 264
Sarasota, FL 34231

Crosby, William H ONC
3302 McIntosh Circle
Joplin, MO 64804
417-782-6630

***Dagen, Daniel L** N
2700 McClelland
Building B Suite 203
Joplin, MO 64804
417-782-1483

Dandridge, Walter C GS
1727 W. 26th St.
Joplin, MO 64804
417-781-4404

Daus, Arthur S NS
2902 B McClelland Blvd.
Joplin, MO 64804
417-781-4733

Davis, Charles S CD
115 W. 16th
Galena, KS 66739
316-783-5348

***Deffenbaugh, Larry D** IM
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Joplin, MO 64804
417-782-4701

Dement, Oman E OBG
1002 McIntosh Circle Dr. #4
Joplin, MO 64804
417-782-1271

DeTar, Burleigh E GP
P.O.Box 2368
Joplin, MO 64803
417-623-4862

Dixon, Herbert K OPH
3201 Mc Intosh Circle Dr.
Joplin, MO 64804
417-624-8390

Doody, Patrick T NEP
1 Emerald Drive
Joplin, MO 64804
417-782-5000

Esch, John G ORS
Joplin Orthopaedic Surg Inc.
P. O. Box 2507
Joplin, MO 64803
417-781-2807

Esther, John R PTH
2700 Mc Clelland
Suite 205 Bldg. B
Joplin, MO 64804
417-623-6330

Ferguson, Robt M GP
508 East 32nd Street
Joplin, MO 64804
417-781-5220

Fritsch, Andrew J IM
2525 Jackson St
Joplin, MO 64804
417-623-1333

Frogge, Jim D U
2817 McClelland Blvd Ste 123
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Gardner, Joe A OBG
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Gavankar, Sharad S P
2606 Cunningham St.
Joplin, MO 64804
417-623-1415

Geurkink, John W DR
1212 Valley View
Joplin, MO 64804
417-782-1363

Goff, John E FP
2601 Cunningham
Lower Level
Joplin, MO 64804
417-782-3600

---

*Doctor of osteopathy.

Graham, Joseph M CDS
2817 Mc Clelland
Suite 211
Joplin, MO 64804
417-782-2190

Grebe, T. Keith OBG
1221 Mc Intosh Circle
Joplin, MO 64804
417-624-1711

Grim, Edward M U
2817 McCleland Blvd. #123
Joplin, MO 64804
417-623-3703

Habermann, James H PTH
2700 McClelland Bldg B 205
Joplin, MO 64804
417-623-6330

Hari, Magaral S AN
P. O. Box 3930
Joplin, MO 64803
417-781-6661

Harrison, Phil W IM
1001 McIntosh Circle Dr.
Joplin, MO 64804
417-623-5250

Hatlelid, R. Robert NEP
1800 W. 30th Street
Joplin, MO 64804
417-782-5000

Hilton, Paul E D
2700 Mc Clelland Bldg A 107
Joplin, MO 64804
417-624-1331

Huff, Kalaichelvi R AN
P. O. Box 3930
Joplin, MO 64803
417-781-6661

Hurly, Michael P PTH
Ferguson's Medical Lab
2700 McClelland Blvd.
Joplin, MO 64804
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Hurst, Wilfred W ORS
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Jones, Jeffrey T OBG
2700 McClelland Suite 304
Joplin, MO 64804
417-782-1600

Jones, Paul S DR
1722 W. 27th P.O. Box 2009
Joplin, MO 64803
417-624-5882

*Jordan, Earl L OPH
702 East 34th St.
Joplin, MO 64804
417-781-0044

Judge, Mark A OPH
1531 W. 32nd St. #102
Joplin, MO 64804
417-781-3630

Kessler, William D FP
2700 McClelland Blvd
Bldg B Suite 204
Joplin, MO 64804
417-782-6767

Levanvo, William IM
1329 E. 32nd St. #3
Joplin, MO 64804
417-623-1362

Loesch, J. John AN
1329 E. 32nd St.
P. O. 2726
Joplin, MO 64803
417-623-2526

*Long, Chester I IM
2700 Mc Clelland Blvd.
Bldg B Suite 209
Joplin, MO 64804
417-782-4601

Maclaughlin, James C IM
3103 Mc Clelland Blvd
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2700 McClelland Blvd.
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Majzoub, Hish S NS
2902 B Mc Clelland Suite 7
P. O. Box 2602
Joplin, MO 64803
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Mangalat, Narayanan K CDS
2817 McCelland Blvd. #205
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Manire, John E EM
3922 Collegeview Dr.
Joplin, MO 64801
417-781-2727

Martin, Clarence A GS
1513 W 32nd
Joplin, MO 64804
417-623-6114

McDonald, Michael G AN
P. O. Box 3930
Joplin, MO 64803
417-781-6661

McDonald, Margaret E PTH
2700 McClelland Bldg B-205
Joplin, MO 64804
417-623-6330

McGonigle, James P OPH
2630 Cunningham
Joplin, MO 64804
417-781-6330

McGonigle, Michael M OTO
2620 Cunningham
Joplin, MO 64804
417-781-4613

Mehaffy, Orville A FP
2817 McClelland Blvd.
Suite 108
Joplin, MO 64804
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Meredith, William R OPH
2817 McClelland Suite 120
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2727 McClelland Blvd.
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Moore, Thomas B CD
P. O. Box 2788
2817 McClelland
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417-781-5387

Mueller, Adolph R ORS
Joplin Orthopaedic Surg. Inc
P.O. Box 2507
Joplin, MO 64803
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Newman, William R PD
P.O. Box 2474
3333 Mc Intosh Circle 6
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417-782-8830

Nickell, Michael D IM
P.O. Box 2708
1001 McIntosh Circle
Joplin, MO 64803
417-781-7110

O'Keefe, Timothy FP
2700 McClelland Suite 204
Joplin, MO 64804
417-782-6767

Patterson, Donald R FP
2700 McClelland Blvd. #C-309
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417-624-1520

Patterson, Grover S FP
1727 River St
Carthage, MO 64836
417-358-2358

Pottenger, L. Kenneth DR
P. O. Box 2009
1722 W. 27th
Joplin, MO 64803
417-624-5882

Pryor, Ira Joe AN
P. O. Box 3930
Joplin, MO 64803
417-781-6661

Putnam, John L ORS
2700 McClelland Blvd.
Joplin, MO 64804
417-781-2807

*Pyron, Jimmy W EM
1102 W. 32nd St.
Joplin, MO 64804
417-623-2801

*Rankin, Wendell D IM
P. O. Box 2624
702 E. 34th
Joplin, MO 64803
417-624-1432

Reddy, Vodur C U
2700 Mc Clelland Blvd.
Bldg B Suite 214
Joplin, MO 64804
417-782-0045

Roberts, Howard H GYN
3101 McClelland
Joplin, MO 64804
417-624-1714

Royce, James J GP
16th And Miner Sts.
Sarcoxie, MO 64862
417-548-3334

Saab, Ghaleb A IM
Chapman Reg Cancer Center
3302 McIntosh Circle
Joplin, MO 64803
417-782-6630

Sabapathy, Shawn CD
2617 Cunningham
Joplin, MO 64804
417-781-4260

Saneman, Paul P OBG
2700 McClelland Blvd
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Joplin, MO 64804
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2700 Mc Clelland Blvd.
Bldg B Suite 216
Joplin, MO 64804
417-782-8350

Schlotter, James W GS
1727 W. 26th
Joplin, MO 64804
417-781-4404

*Schoenfeld, Roger H U
P. O. Box 2220
702 E. 34th
Joplin, MO 64803
417-781-7220

Shagets, Frank W OTO
2700 McClelland Blvd. #C305
Joplin, MO 64804
417-623-5111

Shah, Ramesh R OPH
2902 B McClelland Blvd.
Suite 8
Joplin, MO 64804
417-781-2616

Shanahan, Mary P OBG
2530 Maiden Lane
Joplin, MO 64804
417-623-6525

Sherrod, Duane W PS
3333 McIntosh Circle Ste. 3
Joplin, MO 64804
417-782-3100

Simmons, Jess S D
2700 McClelland Blvd
Bldg A
Joplin, MO 64804
417-624-1331

Singleton, Marvin A OTO
3401 McIntosh Circle
Joplin, MO 64804
417-781-2040

Skelley, Mark J ONC
2727 Mc Clelland
Joplin, MO 64804
417-782-6118

Smith, W. Russell GS
315 Euclid
Carthage, MO 64836
417-358-2911

Smith, Dennis W IM
2700 Mc Clelland
Bldg B Suite 215
Joplin, MO 64804
417-623-5610

Smith, Roland T GS
900 2nd St.
Gulfport, MS 39501

Smolik, Martin J AN
1329 E. 32nd St.
P. O. Box 2726
Joplin, MO 64804
417-623-2526

St. John, Donald R EM
1011 S. Stonehaven
Marshall, MO 65340
816-886-5780

Stinnett, D. Mitchell CD
2817 Mc Clelland Blvd.
Suite 211
Joplin, MO 64804
417-782-2190

Straub, David L A
2902 McClelland Blvd. #2
Joplin, MO 64804
417-782-1343

Stuppy, Robert J CD
2817 McClelland Blvd.
P. O. Box 2788
Joplin, MO 64803
417-781-5387

Subramanian, S. IM
1429 Hazel
Carthage, MO 64836
417-358-8900

Teeter, Brian H IM
3333 McIntosh Circle Dr. #1
Joplin, MO 64804
417-781-2101

Turfboer, Robert P
P. O. Box 3327
Joplin, MO 64803

---

*Doctor of osteopathy.

***Venter, John L** IM
3402 McIntosh Circle
Joplin, MO 64804
417-623-7005

Vinyard, Jack L GP
2329 Jackson
Joplin, MO 64804
417-781-1132

Ward, Mark FP
Rt. 8, Box 339
Neosho, MO 64850
417-451-4100

***Webb, James J** AN
P. O. Box 3930
Joplin, MO 64803
417-781-6661

***Weiss, Randy B** R
P. O. Box 2249
2000 Maiden Lane
Joplin, MO 64803
417-782-4100

White, Nelson P FP
Rt. 7 Box 28B
Neosho, MO 64850
417-451-2060

Whitten, M. Foster GS
Rt 4
Carthage, MO 64836
417-358-4594

Wilcox, Ruth E PD
714 W. 25th St.
Joplin, MO 64804
417-623-6563

Willcoxon, Robert L GS
1727 W. 26th
Joplin, MO 64804
417-781-4404

Wilson, Alice H FP
Rt. 1 Box 163
Neosho, MO 64850
417-624-7229

Yuhas, John A OPH
1531 W. 32nd St. #102
Joplin, MO 64804
417-781-3630

106 — JEFFERSON

Albano, Benj I GS
P O Box 380
Crystal City, MO 63019
314-937-8642

Allbee, Roger H GS
44 Boyce Lane
Festus, MO 63028

Ashcraft, Walter C TS
1170 B East Gannon Dr.
P.O. Box 199
Crystal City, MO 63019
314-937-1585

Bai, Samuel S CD
107 Walnut St.
Festus, MO 63028
314-937-2116

Belen, Marietta PD
County Wide Pediatrics
103 North Mill St.
Festus, MO 63028
314-937-0707

Blank, Michael K GS
P.O. Box 507
De Soto, MO 63020
314-586-2226

Britt, Cornelius L ORS
400-B S. Truman Blvd.
Crystal City, MO 63019
314-937-4041

Chanduwadia, Dossu J OBG
815 E. Main
Flat River, MO 63601
314-586-8958

Charles, Nallathambi FP
P.O. Box 69
Festus, MO 63028
314-937-9199

Deleste, Carlos J U
426 Main
Festus, MO 63028
314-937-9199

Donnell, Harold E FP
700 N Main
De Soto, MO 63020
314-586-2213

Donnell, Robt H DR
113 Crystal Heights Rd
Post Office Box 230
Crystal City, MO 63019
314-937-4641

Elterman, Joseph J IM
Box 186
Crystal City, MO 63019
314-937-9336

Holtmeier, Douglas L AN
117 Courtside Drive
Festus, MO 63028
314-937-6192

Houttuin, Erik U
Jefferson Urological, Inc.
Rt 4, Industrial Dr.
Festus, MO 63028
314-937-8883

Jamaluddin, Mohideen A IM
420 Main St.
Festus, MO 63028
314-937-9199

Johnson, Gordon L PTH
Jefferson Memorial Hospital
Festus, MO 63028
314-933-1620

Judge, Walter T GS
1004 Taylor Ave
Crystal City, MO 63019
314-937-3246

Junker, James A DR
16 Fox Meadows
St. Louis, MO 63127
314-843-0071

Kim, Tae S GS
P. O. Box 408
Crystal City, MO 63019
314-937-6601

Lee, Jung H CD
P. O. Box 309
Crystal City, MO 63019
314-937-0817

Maranan, Diosdado L EM
3895 Jeffco Blvd.
Arnold, MO 63010
314-464-5474

Patel, Indu B IM
1683 Marriott Lane
P.O.Box 308
Barnhart, MO 63012
314-464-7032

Shaplin, Alfred D DR
12668 Westport Dr.
St. Louis, MO 63146
314-576-6348

Snidle, William F OBG
2320 Jefferson Medical Plaza
Crystal City, MO 63019
314-937-1545

Verzola, Eufemio G GS
1004 Industrial Dr.
Herculaneum, MO 63048
314-937-8675

Yoo, Chong-Sup P
204 South Second St.
Festus, MO 63028
314-937-1704

110 — JOHNSON

Cooper, Robt L OBG
P.O.Box 458
Warrensburg, MO 64093
816-747-6162

Dyer, Curtis W FP
220 E. Culton
Warrensburg, MO 64093
816-747-5114

Folkner, Albert L GP
222 E. Culton St.
Warrensburg, MO 64093
816-747-5114

Glover, David FP
220 E. Culton
Warrensburg, MO 64093
816-747-5114

Gonzalez, Mario G R
502 Burkarth Box 757
Warrensburg, MO 64093
816-747-8415

Hanna, Hugh A GS
Route 7
South Mitchell St.
Warrensburg, MO 64093

Johnson, Chas S IM
P. O. Box 8
Warrensburg, MO 64093

Jones, Keith D FP
Rt. 2, Burkarth Rd.
Warrensburg, MO 64093
816-747-9156

Lederer, Chas M FP
617 Clark
Warrensburg, MO 64093
816-747-5711

Maxson, Theodore R A
220 E Culton
Warrensburg, MO 64093
816-747-5114

Sicat, Alfonso V ORS
510 E Gay
Warrensburg, MO 64093
816-747-8161

Watts, Craig M R
1401 Forest Hills Dr.
Vincennes, IN 47591
816-747-3181

***Wescott, Thomas P** FP
217 S. Market
Holden, MO 64040
816-732-4311

115 — LACLEDE

Bealer, Louis A GS
732 S Madison
Lebanon, MO 65536
417-532-9161

Carrington, Howard W GP
P. O. Box 1142
Lebanon, MO 65536
417-532-6151

118 — LAFAYETTE-RAY

Baldwin, Theodore R GP
1236 Jesse James Rd
Excelsior Spgs., MO 64024
816-637-5561

Boydston, Catherine O FP
107 S 2nd St
Odessa, MO 64076
816-633-5511

Boydston, Wyatt W FP
107 S 2nd St
Odessa, MO 64076
816-633-5511

Brady, Hugh S GP
RR 1
Concordia, MO 64020

Cook, Thos B GP
4 Dunns Lane
Richmond, MO 64085
816-776-2201

Davault, Geo K GP
Rt 4 Box 63
Richmond, MO 64085
816-776-2201

DeMotte, Jeanne M FP
Hwy 13 South
P O Box 616
Richmond, MO 64085
816-776-5654

Kuangparichat, Manoch IM
1205 N. Jesse James Rd.
Excelsior Spgs., MO 64024

LaHue, William C GS
1026 Main
Lexington, MO 64067
816-259-2216

Lai, Hsien-Ell GP
505 W. 34th
Higginsville, MO 64037
816-584-3720

Latif, Azhar IM
1026 Main
Lexington, MO 64067
816-259-2216

McFadden, Gene A GP
Waverly Clinic
Waverly, MO 64096
816-493-2262

Meyer, Jerry L FP
905 Main St
Concordia, MO 64020
816-463-7966

Miller, Burney A FP
215 W. Dryden
Odessa, MO 64076
816-633-7525

Pavlu, Robert R GP
Waverly Clinic
Waverly, MO 64096
816-493-2262

Riley, Chas T FP
220 Highway 13 South
Richmond, MO 64085
816-776-6945

Scowley, John E GP
803 E. Main
Richmond, MO 64085
816-776-2201

Singh, Daljeet R GP
12 W. 19th St.
Higginsville, MO 64037
816-584-2192

Tobin, Marla J FP
P. O. Box 756
Higginsville, MO 64037
816-584-7751

Vajaranant, Manit OBG
1026 Main
Lexington, MO 64067
816-259-2216

Ward, Joe W GP
1004 Francis
Lexington, MO 64067

---

*Doctor of osteopathy.

120 — LAKE OF THE OZARKS

Buehler, Carl T GP
6 S Maple St
Eldon, MO 65026

Dickerson, William J IM
Rt. 1, Box 188-29
Osage Beach, MO 65065
314-348-2723

Fotopoulos, Chris K GS
P O Box 128
Osage Beach, MO 65065
314-348-3060

Francis, Roger A DR
Lake of the Ozarks Gen Hosp.
Osage Beach, MO 65065
314-348-3181

Galdamez, John T IM
Lake of the Ozarks Gen Hosp
Osage Beach, MO 65065
314-348-3342

Garrison, Theodore W GP
P O Box 356
Camdenton, MO 65020
314-348-3181

Gunn, Jack GP
P. O. Box 160
Versailles, MO 65084
314-378-4666

Hayden, Melvin R GP
Hayden Medical Services LTD
P. O. Box 1140
Camdenton, MO 65020
314-346-5624

Holley, Donald B GP
Hayden Medical Services LTD
P. O. Box 1140
Camdenton, MO 65020
314-346-5624

Kauffman, Ruth GP
P. O. Box 160
Versailles, MO 65084
314-378-4666

Lischwe, Timothy D OPH
P. O. Box 187 CB
Osage Beach, MO 65065
314-348-8002

Lyle, Robt R GP
P. O. Box 160
Versailles, MO 65084
314-378-4666

O'Connor, Edward F OPH
P. O. Box 277
Versailles, MO 65084

Pelegrin, Robert J U
P. O. Box 1135
Camdenton, MO 65020
314-348-2345

Schekorra, Frederick M GP
300 S. Monroe
Versailles, MO 65084
314-378-4666

Smeltzer, Frederick M R
Lake of the Ozarks Hosp.
Osage Beach, MO 65065
314-348-3181

Tietjen, Fred O ORS
P. O. Box 187
Osage Beach, MO 65065
314-348-3181

Washburn, John L GP
P. O. Box 109, Bank Bldg.
Versailles, MO 65084
314-348-4203

White, David S FP
1050 Bittersweet
Lake Ozark, MO 65049

---

*Doctor of osteopathy.

125 — METRO MED

Aaron, Geo U
5840 Mission Drive
Shawnee Mission, KS 66208

Abdou, Nancy L HEM
Suite T101
6420 Prospect
Kansas City, MO 64132
816-363-4100

Abella, Ben Zulueta Z GS
416 Main
Belton, MO 64012
816-331-4315

Abend, Melvin N PS
848 W. 52nd Terrace
Kansas City, MO 64112

Abercrombie, Keith J U
1010 Carondelet Dr Suite 210
Kansas City, MO 64114
816-942-4243

Abrams, Bernard M N
Ste 400 Highlands Prof Tower
6724 Troost
Kansas City, MO 64131
816-444-4082

Adelman, Arthur GS
6305 Aberdeen
Shawnee Mission, KS 66208
816-333-2000

Adelman, Bruce T AN
1000 E. 50th St. Suite 340
Kansas City, MO 64110
816-333-7484

Adler, Federico ORS
6724 Troost Ave #300
Kansas City, MO 64131
816-363-6500

Aeder, Mark I GS
6400 Prospect Suite 328
Kansas City, MO 64132
816-276-3788

Agee, L. Glenn FP
10000 Hemlock Dr.
Overland Park, KS 66212

Ahmed, Iftekhar N
2900 Baltimore Suite 320
Kansas City, MO 64108
816-756-2651

Ahuja, Suraj P CD
Rockhill Cardiology Group
6650 Troost - Suite 106
Kansas City, MO 64131
816-444-7444

Akin, C. David CD
1515 W. Truman Rd. Suite 602
Independence, MO 64050
816-461-6837

Alberg, Marvin R OM
3525 N W 60th Terrace
Kansas City, MO 64151

Albright, Patti W IM
Swope Pkwy Health Ctr
4900 Swope Parkway
Kansas City, MO 64130
816-923-5800

Alderman, Donald P AN
1000 E. 50th St. Suite 340
Kansas City, MO 64110
816-333-7484

Alfie, Salomon CHP
7301 Mission Rd. #328
Shawnee Mission, KS 66208
816-362-1444

Ali, Mohammed E AN
2400 R. D. Mize Rd., Suite 1
Independence, MO 64057
816-373-0263

Allen, Arthur A N
8800 W. 75th St. Suite 100
Shawnee Mission, KS 66204
913-384-4200

Allen, Mark J GE
4320 Wornall Rd. Suitre 332
Kansas City, MO 64111
816-561-2000

Allen, Robt E GS
332 Medical Plaza
4320 Wornall Rd.
Kansas City, MO 64111
816-931-2393

Allen, Thomas P IM
6675 Holmes Suite 440
Kansas City, MO 64131
816-363-5662

Allphin, Barbara J PD
Childrens Mercy Hosp
24th & Gillham Rd
Kansas City, MO 64108
816-234-3050

Alon, Uri PD
Childrens Mercy Div PED/NEP
24th & Gillham Rd.
Kansas City, MO 64108
816-234-3010

Alsop, Webb S AN
3604 W 53rd Street
Shawnee Mission, KS 66205

Altomare, Edward P AN
1030 W 65th St
Kansas City, MO 64113

Ames, Mary B N
2318 Lovers Lane
St. Joseph, MO 64505

Amini, Jafar DR
4900 Swope Parkway
Kansas City, MO 64130
816-923-5800

Ammatelli, Francis J IM
1010 Carondelet Dr. #310
Kansas City, MO 64114
816-942-8558

Amoury, Raymond A PDS
Childrens Mercy Hospital
24th & Gillham Rd
Kansas City, MO 64108
816-234-3575

Anderson, John V NPM
Children's Mercy Hosp.
24th and Gillham Rd
Kansas City, MO 64108
816-234-3593

Anderson, Raymond B PD
6024 State Line
Shawnee Mission, KS 66208

Anderson, Sue K NEP
44th & Wornall Rd.
Kansas City, MO 64111
816-932-2000

Andes, Elizabeth A IM
1515 W. Truman Rd. Suite 504
Independence, MO 64050
816-252-9002

Andrus, Bailey C PD
3208 W. 81st Terrace
Leawood, KS 66206

Anglen, Jeffrey O ORS
4320 Wornall Rd., Suite 720
Kansas City, MO 64111
816-753-5102

Anthony, James P DR
1010 Carondelet Dr Suite 114
Kansas City, MO 64114
816-942-6900

Arbab, Ali A GS
6650 Troost Suite 109
6650 Troost
Kansas City, MO 64131
816-444-0905

Arms, Arnold V IM
11209 Granada
Leawood, KS 66211

Arms, Richard A IM
St. Luke's Lenexa Clinic
8704 Bourgade
Lenexa, KS 66219
913-492-0336

Arnold, John D IM
5801 Howe Drive
Fairway, KS 66205

Arnold, Lowry K PTH
St. Mary's Hosp -B.S.
201 W. R.D. Mize Rd.
Blue Springs, MO 64015
816-228-5900

Arribas, Aurora I GP
Richard Cabot Clinic
1810 Summit
Kansas City, MO 64108
816-471-0900

Arribas, Romeo F GS
1316 W. 40 Highway
Blue Springs, MO 64015
816-229-9125

Arrighi, David A GS
2301 Holmes
Kansas City, MO 64108
816-556-3505

Ashby, Jennifer D D
2750 Hospital Dr. Suite 404
No Kansas City, MO 64116
816-472-0400

Ashcraft, Keith W PDS
509 Broadway Med Bldg
4400 Broadway
Kansas City, MO 64111
816-931-5538

Ashley, Lillard G CD
930 Carondelet Dr. Ste 201
Kansas City, MO 64114
816-943-3955

Atwell, Floyd C OBG
6332 Reeds Drive
Shawnee Mission, KS 66202

Austin, George M U
1515 W. Truman Rd.
Suite 404
Independence, MO 64050
816-836-8831

Averill, Keith H CD
2840 Verona Rd.
Mission Hills, KS 66208

Ayres, Willa J FP
44th at Wornall
Dept of Med Educ
Kansas City, MO 64111
816-932-3406

Backstrom, Jay T IM
Samuel U. Rodgers Hlt Ctr
825 Euclid Ave.
Kansas City, MO 64124
816-474-4920

Baker, Philip J FP
9205 E. 40 Highway
Independence, MO 64055
816-737-1505

Ballard, V. Bryce IM
6618 Rainbow Rd.
Shawnee Mission, KS 66208

Bankuti, Ferenc R
310 Research Med Off Bldg
6400 Prospect
Kansas City, MO 64132
816-523-2400

Bare, Chester I PD
Raytown Clinic
9406 E. 63rd
Kansas City, MO 64133
816-356-1060

Barelli, Pat A OTO
5609 Mission Drive
Shawnee Mission, KS 66208

Barloon, James H OBG
Prime Health
9150 E. 41st Terrace
Kansas City, MO 64133
816-356-5000

Barnard, John L ORS
44th & Wornall Rd.
Kansas City, MO 64111
816-932-2047

Barnthouse, Cris D ORS
Suite 400 6675 Holmes
Kansas City, MO 64131
816-444-8300

Barr, Glenn A GS
520 E. 63rd St.
Kansas City, MO 64110
816-361-2800

Barr, W. Kent CD
2929 Baltimore, Suite 415
Kansas City, MO 64108
816-756-0695

Barry, Wm B OTO
422 Medical Plaza
4320 Wornall Rd.
Kansas City, MO 64111
816-931-3296

Barter, Bruce PD
9150 E. 41st Terrace
Kansas City, MO 64133
816-356-5000

Barton, Jean C PD
24th & Gillham Rd.
Kansas City, MO 64108
816-234-3681

Basantz, F. Victor FP
Hickman Mills Clinic
11201 Colorado
Kansas City, MO 64137
816-763-5200

Baska, Richard E CHN
Children's Mercy Hospital
24th & Gillham Rd.
Kansas City, MO 64108
816-234-3753

Bass, Walter R OPH
9500 E 63rd St Suite 109
Raytown, MO 64133
816-353-7331

Bateman, Timothy M IM
Medical Plaza II, Ste 20
4320 Wornall Rd.
Kansas City, MO 64111
816-931-1883

Batts, Barbara A OBG
1010 Carondelet Dr.
Suite 328
Kansas City, MO 64114
816-941-0700

Bauer, Lafe W AN
4818 W 80th
Prairie Village, KS 66208

Baum, Frank E OBG
Suite 910 6724 Troost
Kansas City, MO 64131
816-333-3305

Bauman, Alan E OPH
2928 Main St. Suite 130
Kansas City, MO 64108
816-756-1236

Bay, Merrill R OM
301 S. Woods Chapel Rd
Blue Springs, MO 64015

Bayer, William L HEM
4040 Main
Kansas City, MO 64111
816-753-4040

Beall, McPherson S ORS
1010 Carondelet Dr. #426
Kansas City, MO 64114
816-941-0200

Beatty, Eugene C PTH
Children's Mercy Hospital
24th & Gillham Rd.
Kansas City, MO 64108
816-234-3234

Beatty, Robert M NS
Suite 328 4320 Wornall Rd.
Kansas City, MO 64111
816-931-1150

Beauchamp, Gary D CD
Suite 4011 Medical Plaza
4320 Wornall Rd.
Kansas City, MO 64111
816-531-5510

Beck, Calvin E U
300 Medical Plaza
4320 Wornall Rd.
Kansas City, MO 64111
816-561-7612

Becker, Rolfe A OPH
804 Highlands Prof Tower
6724 Troost Ave.
Kansas City, MO 64131
816-363-3363

Beeks, John W OM
720 Oak Street
Kansas City, MO 64106
816-842-1146

Behrend, Ann E OBG
930 Carondelet Dr. Ste 303
Kansas City, MO 64114
816-943-2273

Behrends, Steven H GS
1010 Carondelet Suite 320
Kansas City, MO 64114
816-942-8250

Bell, Hubert H CD
Suite 40 II Medical Plaza
4320 Wornall Rd
Kansas City, MO 64111
815-531-5510

Bell, Malinda H EM
Shawnee Mission Med Ctr
9100 W. 74th St.
Shawnee Mission, KS 66201
913-676-2000

Bell, Wm F FP
615 West 3rd Street
Lee's Summit, MO 64063
816-524-3799

Beller, Thomas A PUD
6420 Prospect Suite T303
Kansas City, MO 64132
816-333-1919

Bender, Joan C PD
Children's Mercy Hospital
24th at Gillham Rd.
Kansas City, MO 64108
816-234-3686

Bender, Walter L IM
Kidney Associates
6700 Troost - Suite 10
Kansas City, MO 64131
816-361-0670

Bennett, James D IM
4315 W. 111th Terrace
Leawood, KS 66211

Bennett, Danny L PS
4177 Broadway
Kansas City, MO 64111
816-561-1414

Bennett, Desiree N IM
2000 E. Bannister
P. O. Box 419159
Kansas City, MO 64141
816-997-3200

Benoit, Hector W TS
7919 Pawnee
Shawnee Mission, KS 66208

Benson, Russell L PTH
Menorah Hospital
4949 Rockhill Rd.
Kansas City, MO 64110
816-276-8642

Benson, William F ORS
720 Medical Plaza
4320 Wornall Rd.
Kansas City, MO 64111
816-753-5102

Bernhardt, Gary D FP
13013 Fuller Ave. Suite B
Grandview, MO 64030
816-761-1660

Bernhardt, Mark ORS
4320 Wornall Rd.
610 Med Plaza Bldg.
Kansas City, MO 64111
816-531-5757

Berry, Maxwell G IM
32 Compton Court
Shawnee Mission, KS 66208

Bettinger, Irene E N
4320 Wornall Rd. Suite 220
Kansas City, MO 64111
816-531-4510

Biber, Robert J U
1515 W. Truman Rd. Suite 404
Independence, MO 64050
816-836-8831

Bickley, James E OBG
328 Carondelet Med. Bldg.
1010 Carondelet Dr
Kansas City, MO 64114
816-941-0700

Bidwell, Robt E P
4320 Wornall Rd Ste 704
Kansas City, MO 64111
816-561-2524

Biery, Richard M PH
K C Mo Health Dept
414 E 12th St
Kansas City, MO 64106
816-274-1381

Biggs, Alfred D IM
Suite T101
6420 Prospect
Kansas City, MO 64132
816-363-4100

Biggs, Harry L GP
RR2 Box 545
Galena, MO 65656

***Billow, Michael A** PD
2160 S. First Ave.
Maywood, IL 60153

Bills, Marvin L N
7434 Baywoods Lane
Pensacola, FL 32504

Binda, Robert E AN
Anesthesia Assoc of KC, Inc
6400 Prospect Suite 138
Kansas City, MO 64132
816-444-1139

Birenboim, Nancy IM
1000 E. 50 #405
Kansas City, MO 64110
816-444-7300

Black, Don A IM
Suite T101
6420 Prospect
Kansas City, MO 64132
816-363-4100

Black, Thomas C OPH
1010 Carondelet Dr Suite 416
Kansas City, MO 64114
816-942-8555

Blim, R. Don PD
Dir Med Aff St. Luke's Hosp.
Wornall Rd. at 44th St.
Kansas City, MO 64111
816-932-3601

Bloom, Stephen A CD
4949 Rockhill Rd.
Kansas City, MO 64110
816-276-8260

Blum, Philip C AN
6400 Prospect #138
Kansas City, MO 64132
816-444-1139

Bode, Eugene T AN
Suite 200 8900 Ward Parkway
Kansas City, MO 64114
816-363-5652

Bodenhausen, Gary E FP
104 N. 7th Highway Suite B
Blue Springs, MO 64014
816-229-8880

Bogart, Douglas B CD
415 Penn Park
2929 Baltimore
Kansas City, MO 64108
816-756-0695

Bohn, William W ORS
6420 Prospect Suite T415
Kansas City, MO 64132
816-523-1520

Bohon, Barbara D OBG
4400 Broadway Suite 302
Kansas City, MO 64111
816-753-7060

Bordy, Marvin D PD
930 Carondelet Dr. Ste 302
Kansas City, MO 64114
816-942-5437

Borkon, A. Michael CDS
Suite 50-II 4320 Wornall Rd.
Kansas City, MO 64111
816-931-7743

Botwin, Arnold E GS
3600 W. 89th St.
Leawood, KS 66206

Bower, James S PUD
Suite T303 6420 Prospect
Kansas City, MO 64132
816-333-1919

Bowlin, Steven K IM
Suite T101 6420 Prospect
Kansas City, MO 64132
816-363-4100

Bowser, John F R
22 Esmeralda Place
Hot Springs, AR 71909

Boyd, George K IM
4320 Wornall Rd #626
Kansas City, MO 64111
816-931-1166

Boyer, Philip A GER
6724 Reeds Rd.
Overland Park, KS 66204

Boylan, Peter C ORS
6650 Troost Suite 103
Kansas City, MO 64131
816-444-4664

Braby, Howard H OB
1515 W Truman Rd Ste 306
Independence, MO 64050
816-836-4200

Bradford, John F OPH
124 Medical Plaza
4320 Wornall
Kansas City, MO 64111
816-931-4840

Bradley, James K PUD
2929 Baltimore Suite 545
Kansas City, MO 64108
816-561-6277

---

*Doctor of osteopathy.

Bradshaw, Wm D FP
#1 Pershing Square
2301 Main
Kansas City, MO 64108
816-395-2049

Brand, Stanley N GE
710 Highland Prof Tower
6724 Troost
Kansas City, MO 64131
816-333-6000

Braverman, Abe E IM
Suite 201 6650 Troost
Kansas City, MO 64131
816-363-7710

Bresnahan, Dennis R IM
Medical Plaza II-20
4320 Wornall Rd.
Kansas City, MO 64111
816-931-1883

Brewer, Joseph H ID
Suite 415 4620 J.C. Nichols
Kansas City, MO 64112

Brock, Arthur L GE
1515 West Truman Rd. #403
Independence, MO 64050
816-836-1616

Brodkey, Mark J U
T417 Research Tower Bldg.
6420 Prospect
Kansas City, MO 64132
816-333-2880

Brook, Charles J PUD
6420 Prospect
Suite T303
Kansas City, MO 64132
816-333-1919

Brothers, Mary E OM
2727 Main St.
Kansas City, MO 64108
816-842-3480

Brower, Clyde L FP
17421 Medical Center Pkwy
Independence, MO 64057
816-373-7795

Brown, Adrian J FP
12 East 63rd St
Kansas City, MO 64113

Brown, Elwyn S AN
200 W. 115th St.
Kansas City, MO 64114

Brown, Irwin S U
RR #1 Box 43
La Cygne, KS 66040

Brown, Frances S IM
5665 McCoy Ave.
Kansas City, MO 64133
816-252-9380

Brown, Marden L FP
1515 W. Truman Suite 302
Independence, MO 64050
816-836-8200

Brown, Menzie H R
8900 Indian Creek Pkwy #450
Overland Park, KS 66210
913-469-8883

Brown, Robt S OBG
Suite 304 930 Carondelet Dr.
Kansas City, MO 64114
816-943-2229

Browne, Jon E ORS
Suite 400 6675 Holmes
Kansas City, MO 64131
816-444-8300

Bruce, Robert P ORS
6420 Prospect Suite 207
Kansas City, MO 64132
816-444-9000

Bryan, Wm H GS
3939 Prospect
Kansas City, MO 64130
816-861-2510

Bryant, T J IM
Suite 628 6700 Troost
Kansas City, MO 64131
816-444-9348

Buchanan, Barbara N CHP
Suite 202 4400 Broadway
Kansas City, MO 64111
816-561-2025

Buchwach, Kenneth A OTO
4240 Blue Ridge Blvd.
Suite 434
Kansas City, MO 64133
816-358-7177

Buckner, Robert C OBG
3507 West 87th Street
Leawood, KS 66206

Budke, Harold A FP
1219 W. 66th Terrace
Kansas City, MO 64113

Buie, Bruce R FP
11201 Colorado
Kansas City, MO 64137
816-763-5200

Buie, Steven E FP
11201 Colorado
Kansas City, MO 64137
816-763-5200

Bunting, Williston P OTO
1231 W 62nd St.
Kansas City, MO 64113

Burch, Timothy K PTH
1010 Carondelet Suite 126
Kansas City, MO 64114
816-942-8100

Burry, Virgil F PD
Childrens Mercy Hosp
24th & Gillham Rd.
Kansas City, MO 64108
816-234-3015

Butin, Richard E IM
6420 Prospect Suite T101
Kansas City, MO 64132
816-363-4100

Butler, Mary A AN
Hannibal Clinic, Inc.
711 Grand POBox 311
Hannibal, MO 63401
816-363-5652

Butterfield, Mari Anne AN
Suite 1, 2400 R. D. Mize Rd.
Independence, MO 64057
816-373-0263

Butterworth, Nelson S IM
725 W 49th Terrace
Kansas City, MO 64112

Byars, Steven R OPH
6650 Troost
Kansas City, MO 64131
816-333-1120

Cabanas, Justo J P
RM 906 2105 Independence Ave
Kansas City, MO 64124
816-283-2873

Caffrey, Raymond J PTH
1509 W. Truman Rd.
Independence, MO 64050
816-836-8100

Caldwell, John K FP
436 E. 65th Terrace
Kansas City, MO 64131
816-444-7666

Calhoun, Kirk A IM
1000 E. 50 #405
Kansas City, MO 64110
816-444-7300

Callaway, Jo J P
620 Medical Plaza
4320 Wornall Rd.
Kansas City, MO 64111
816-561-2550

Callaway, Lawrence A PTH
3030 Baltimore
Kansas City, MO 64108
816-753-4600

Callenbach, John C PD
Childrens Mercy Hospital
24th & Gillham Rd.
Kansas City, MO 64108
816-234-3591

Calovich, Emery R IM
3500 W. 49th Street
Shawnee Mission, KS 66205

Campbell, Frederick B CRS
3501 W. 95th St. Apt 241
Overland Park, KS 66206

Campbell, John G CRS
6400 Prospect Suite 228
Kansas City, MO 64132
816-333-7565

Canent, Ramon V PDC
4320 Wornall Rd. #348
Kansas City, MO 64111
816-753-4414

Capps, Eugene C AN
P. B. Box 11316
Kansas City, MO 64112
816-276-7901

Carlson, Hjalmar E U
8805 W. 102nd Pl #A Box 9R
Overland Park, KS 66212

Carter, James E FP
7800 Paseo
Kansas City, MO 64131
816-523-3055

Caruso, Alfred C IM
1010 Carondelet Dr. #310
Kansas City, MO 64114
816-942-8558

Caruso, Alfred A OBG
6700 Troost Suite 236
Kansas City, MO 64131
816-523-0300

Case, Wm F OPH
416 Carondelet Medical
1010 Carondelet Dr
Kansas City, MO 64114
816-942-8555

Casement, Brian A AN
Anesthesia Associates of KC
6400 Prospect-Suite 138
Kansas City, MO 64132
816-444-1139

Cashman, John W PH
AT&T Microe Electronics
777 North Blue Parkway
Lee's Summit, MO 64063
816-524-3442

Caughron, Michael R PTH
2316 E Meyer Blvd.
Kansas City, MO 64132
816-276-4692

Centner, Paul J GS
4304 W. 66th St.
Prairie Village, KS 66208

Chandler, Robt A PS
4177 Broadway
Kansas City, MO 64111
816-561-1414

Chandra, Mahesh IM
1515 W Truman Rd
Independence, MO 64050
816-836-8130

Charapata, Steven G AN
6400 Prospect Suite 138
Kansas City, MO 64114
816-444-1139

Charette, Richard P PD
9150 E. 41st Terr.
Kansas City, MO 64133
816-356-5000

Chaudhuri, Sudha T OBG
6225 Raytown Trafficway
Raytown, MO 64133
816-353-2400

Chaudhuri, Tapan K IM
6225 Raytown Trafficway
Raytown, MO 64133
816-353-2400

Chernoff, Selbert G IM
600 NW Murray Rd. Suite 201
Lee's Summit, MO 64081
816-524-5600

Childs, Donna S CHP
4400 Broadway - Suite 202
Kansas City, MO 64111
816-561-2025

Childs, Richard M P
4320 Wornall Rd Ste 452
Kansas City, MO 64111
816-531-2325

Chilton, Jonathan D NS
6420 Prospect Suite T411
Kansas City, MO 64132
816-363-2500

Chu, Peter Y GS
1010 Carondelet Dr. Ste 320
Kansas City, MO 64114
816-942-8250

Chun, Chung S PD
6420 Prospect Suite T 205
Kansas City, MO 64132
816-363-1304

Chung, Richard T IM
1204 W. 40 Highway
Blue Springs, MO 64015
816-229-4555

Churchill, Stephen W CHP
4400 Broadway Suite 202
Kansas City, MO 64111
816-561-2025

Cibis, Gerhard W OPH
421 Plaza Medical Bldg
4620 JC Nichols Park
Kansas City, MO 64112
816-561-0306

Clark, Irving H FP
11909 Madison
Kansas City, MO 64145

Clark, Granville E PD
6025 Prospect
Kansas City, MO 64130
816-333-3112

Clarkston, Wendell IM
Truman Medical Center
2301 Holmes
Kansas City, MO 64108
816-556-3000

Cline, Daniel M IM
14 E. 56th St.
Kansas City, MO 64113
816-452-6620

Cline, Merle A GP
4126 St John Ave
Kansas City, MO 64123
816-483-3119

Cline, Patricia W R
14 E. 56th Street
Kansas City, MO 64113
417-836-1945

Cloogman, Howard M DR
8900 Indian Creek Pkwy #450
Overland Park, KS 66210
913-469-8883

---

*Doctor of osteopathy.

Clothier, Robt W PD
17500 Medical Center Pkwy
Suite 5
Independence, MO 64057
816-373-1111

Clough, Chas A NS
4440 Broadway Suite 301
Kansas City, MO 64111
816-561-4655

Cockerell, Charles F PD
205 West R.D. Mize Rd. #304
Blue Springs, MO 64014
816-228-4770

Cockerell, Sanford F PD
11200 Winner Rd
Independence, MO 64052
816-252-9850

***Cohen, Donald L** IM
Suite 408-6724 Troost
Kansas City, MO 64131
816-361-2123

Cohen, Harry K FP
Suite 408-6724 Troost
Kansas City, MO 64131
816-361-2123

Cohen, Joel N TR
2750 Hosptial Dr. Suite LL2
No. Kansas City, MO 64116
816-346-7905

Cohen, Lawrence S CD
Plaza Medical Bldg.
1000 E 50th Ste 305
Kansas City, MO 64110
816-363-8100

Cohen, Marvin C GS
6650 Troost Suite 105
Kansas City, MO 64131
816-523-3220

Cokingtin, Leovigildo C PD
Suite 310
1515 W. Truman Rd.
Independence, MO 64050
816-833-0990

Cole, Sherman W P
6400 Prospect Suite 312
Kansas City, MO 64132
816-636-5554

Colglazier, Mary C IM
204 Plaza Time Bldg
411 Nichols Rd.
Kansas City, MO 64112
816-753-7496

Collier, Robert E EM
2800 Hospital Drive
Kansas City, MO 64116
816-346-7000

Collins, John W ORS
1515 W. Truman Rd. #401
Independence, MO 64050
816-254-4800

Colom, George A P
602 Highlands Prof Towe
6724 Troost
Kansas City, MO 64131
816-333-5941

Conn, Robert D CD
Medical Plaza II-20
4320 Wornall Rd.
Kansas City, MO 64111
816-931-1883

Conner, W. Edwin CRS
304 Medical Plaza
4320 Wornall Rd.
Kansas City, MO 64111
816-531-5648

Coppinger, Thos A IM
415 Penn Park
2929 Balitmore
Kansas City, MO 64108
816-756-0695

Cordell, Larry D ORS
6420 Prospect Ave. #T207
Kansas City, MO 64132
816-444-9000

Cornwell, Karen R OBG
1010 Carondelet Dr. Ste.328
Kansas City, MO 64114
816-941-0700

Cortez, Edwin A MFS
6675 Holmes Suite 340
Kansas City, MO 64131
816-444-2895

Cortner, Mary C FP
Suite 502 6700 Troost
Kansas City, MO 64131
816-444-4232

Cotton, Thos R OTO
3725 Broadway
Kansas City, MO 64111
816-931-2606

Couchonnal, Guillermo IM
1010 Carondelet Dr Suite 105
Kansas City, MO 64114
816-942-4755

Cowan, Geo A TR
50 Windrush Court
Oldsmar, FL 34677

Cowan, John H R
8900 Indian Creek Pkwy #450
Overland Park, KS 66210
913-469-8883

Cox, Kenneth E OBG
510 Shamrock Lane
Apt. 302 Villa II
Lee's Summit, MO 64081

Cramer, Quentin IM
SSA Disability Ste 150
9140 Ward Parkway
Kansas City, MO 64114
816-444-0400

Crockett, James E CD
4320 Wornall Med Plaza II-20
Kansas City, MO 64111
816-931-1883

Cronemeyer, Richard L DR
6650 Troost Suite 210
Kansas City, MO 64131
816-363-5606

Crouch, Thos T NEP
4320 Wornall Rd
Kansas City, MO 64111
816-531-0552

Crow, Martin L PS
408 Broadway Med Bldg
4400 Broadway
Kansas City, MO 64111
816-561-6633

Csaki, Bela CD
1515 W. Truman Rd. Ste 502
Independence, MO 64050
816-461-7533

Culver, Perry J IM
4320 Wornall Rd. Ste. 332
Kansas City, MO 64111
816-561-2000

Cundiff, H. Clay OPH
1415 Viceroy Pl.
Lee's Summit, MO 64081
816-478-1230

Curran, Desmond OPH
109 Broadway Med Bldg
4400 Broadway
Kansas City, MO 64111
816-756-1333

Curran, Terrence OPH
4400 Broadway Bldg #109
Kansas City, MO 64111
816-756-1333

Curts, Calvin J OPH
714 Medical Plaza
4320 Wornall Rd.
Kansas City, MO 64111
816-561-2289

Cygan, Ronald W PD
373 W. 101st Terr.
Kansas City, MO 64114
816-942-8200

Daily, Donna K PD
Children's Mercy Hosp.
24th & Gillham Rd.
Kansas City, MO 64108
816-234-3591

Dalton, Timothy T AN
917 W. 120th
Kansas City, MO 64145

Darnell, Dale E ORS
4320 Wornall Rd #720
Kansas City, MO 64111
816-753-5102

Davidner, Mark L IM
Suite 700-6724 Troost
Kansas City, MO 64131
816-333-1326

Davidson, Kendrick C R
Suite 710 4320 Wornall
Kansas City, MO 64111
816-531-9481

Davis, Donald R GS
12131 Goddard
Overland Park, KS 66213

Davis, Alexander C IM
6724 Troost Suite 710
Kansas City, MO 64131
816-333-6000

Davis, Carl S FP
Lee's Summit FP
805 NE Rice Road
Lee's Summit, MO 64063
816-525-1244

Davis, Carolyn T PD
4601 W. 109th Suite 122
Overland Park, KS 66211
913-491-4045

Davis, Herbert V PD
4400 Broadway
Kansas City, MO 64111
816-561-8100

Davis, Jack M IM
Suite 208
8800 Blue Ridge
Kansas City, MO 64138
816-761-8190

Davis, John M IM
Suite 208 8800 Blue Ridge
Kansas City, MO 64138
816-761-8190

Davis, W. Bob DR
8900 Indian Creek Pkwy #450
Overland Park, KS 66210
913-469-8883

Day, Chester L P
4140 W. 71st St.
Shawnee Mission, KS 66208
913-432-7276

Deeken, James H D
411 Nichols Rd Ste 170
Kansas City, MO 64112
816-561-9300

DeFeo, Theodore C PTH
Wornall Rd At 44th St
Kansas City, MO 64111
816-932-2500

DeFeo, Frederick G IM
2411 Holmes
Kansas City, MO 64108
816-276-1922

Dehning, Doug O OPH
4801 Cliff Av. Suite 100
Independence, MO 64055
816-478-1230

***Delaney, Adrain J** AN
Anesthesia Associates of KC
6400 Prospect-Suite 138
Kansas City, MO 64132
816-444-1139

Delcambre, Marie A IM
Suite 550 2900 Baltimore
Kansas City, MO 64108
816-756-2673

Dembinski, David R IM
4900 Swope Parkway
Kansas City, MO 64130
816-923-5800

Dempsey, Herbert A FP
615 W 3rd St
Lee's Summit, MO 64063
816-524-3799

Devins, George S PUD
520 Rockhill Med. Bldg.
6700 Troost
Kansas City, MO 64131
816-363-0787

Diehl, Antoni M PDC
13106 W. 75th Terrace
Lenexa, KS 66216
816-753-4414

Dixon, Geo D DR
710 Medical Plaza
4320 Wornall Rd.
Kansas City, MO 64111
816-531-9481

Dlabal, Luke J OTO
Suite 205
17221 E. 23rd St.
Independence, MO 64057
816-373-4300

Dlabal, Luke J FP
3729 Blue Ridge Blvd.
Independence, MO 64052

Doering, Robt W GS
Suite 501
6420 Prospect Ave.
Kansas City, MO 64132
816-333-8151

Donohoe, Charles D N
17221 E 23rd St
Independence, MO 64057
816-373-3213

Dorsch, Ervin H FP
Lake City Army Amm. Plan
Independence, MO 64050
816-795-7308

Dorsch, Stephen E FP
17611 East 24th Highway
Independence, MO 64056
816-257-7787

Dorzab, Linda L IM
Suite 120 - 1000 E. 50th St.
Kansas City, MO 64110
816-276-8971

Dorzab, William E PTH
Menorah Medical Center
4949 Rockhill Rd
Kansas City, MO 64110
816-276-8262

Downey, James W FP
6906 W. 52nd Place 2A
Mission, KS 66202

Drahota, Lawrence J GS
10550 Quivira
Overland Park, KS 66215
913-492-6200

---

*Doctor of osteopathy.

Drake, Roy F GS
6600 Outlook
Mission, KS 66202

Draney, Thos E PD
28 Kirk Cudbright Dr.
Hiwasse, AR 72739
501-855-2651

Dreher, Richard L PD
4400 W. 112th St.
Leawood, KS 66211

Driks, Michael R IM
Baptist Medical Center
6601 Rockhill Road
Kansas City, MO 64131
816-276-7180

Drisko, Jeanne A R
4949 Rockhill Rd.
Kansas City, MO 64110
816-276-8201

Drisko, Robert M ORS
Suite 500 2929 Baltimore
Kansas City, MO 64108
816-561-3003

Drisko, Robert M ORS
2929 Baltimore
Kansas City, MO 64108
816-561-3003

Dubin, Sol H ORS
Suite 401
1515 W Truman Rd
Independence, MO 64050
816-254-4800

Duello, Deborah K OBG
200 NE Chipman Rd.
Lee's Summit, MO 64063
816-525-4456

Duer, Mildred C PD
324 E 69th Terr
Kansas City, MO 64113

Duerksen, Joseph J AN
Dept of Anesthesiology
44th & Wornall Rd.
Kansas City, MO 64111
816-932-2033

Dugan, Gerald F ORS
6650 Troost Avenue Suite 103
Kansas City, MO 64131
816-444-4664

Dukstein, Walter G NM
6400 Prospect #332
Kansas City, MO 64132
816-333-5787

Duncan, Wm H GS
Horizon House North
3951 Gulf Shore Blvd.
Naples, FL 33940

Durie, Robt H PUD
545 Penn Park
2929 Baltimore
Kansas City, MO 64108
816-561-6277

Durnell, Monaford D FP
Goppert Family Care Ctr
6601 Rockhill Rd
Kansas City, MO 64131
816-276-7600

Durrie, Daniel S OPH
2900 Baltimore Ave Suite 650
Kansas City, MO 64108
816-931-4733

Dwyer, Frank X D
6408 Verona Rd.
Shawnee Mission, KS 66208

Earnest, James B CD
415 Penn Park
2929 Baltimore
Kansas City, MO 64108
816-756-0695

Eaton, Paula OBG
930 Carondelet Suite 304
Kansas City, MO 64114
816-943-2229

Edmisten, Jack P
P. O. Box 1570
Independence, MO 64055
816-346-9100

Eikermann, William C P
100 Research Med. Off. Bldg.
6400 Prospect
Kansas City, MO 64132
816-523-0103

Eisemann, Gustave IM
Statland Clinic
6724 Troost Suite 710
Kansas City, MO 64131
816-333-6000

Elias, David J FP
9205 E New 40 Highway
Independence, MO 64055
816-356-2000

Elkins, Robert L U
Rockhill Med Plaza N.
6650 Troost Suite 206
Kansas City, MO 64131
816-333-0500

Ellfeldt, Howard J ORS
6420 Prospect Ste T207
Kansas City, MO 64132
816-444-9000

Elliott, Wade E FP
3517 Terrace St.
Kansas City, MO 64111

Elliott, Raymond G FP
6136 Reinhardt Drive
Shawnee Mission, KS 66205

Ellis, Jean H OPH
17500 Med Ctr Parkway #7
Independence, MO 64057
816-373-5593

Ellis, John C OTO
4240 Blue Ridge Blvd #434
Kansas City, MO 64133
816-358-7177

Elser, Otto H OPH
604 Rankin Rd.
Independence, MO 64050

Emory, Jeffrey O EM
Bethany Med Ctr
51 N 12th St Dept of EM
Kansas City, KS 66102
816-281-8881

Enriquez, Roman S IM
2929 Baltimore #310
Kansas City, MO 64108
816-531-3530

Ericsson, Saml E P
205 Highlands Prof Tower
6724 Troost
Kansas City, MO 64131
816-361-0899

Eubank, David F PD
9406 E 63rd St
Raytown, MO 64133
816-356-1060

Eubank, Wm Y IM
Suite T101
6420 Prospect
Kansas City, MO 64132
816-363-4100

Evans, Joseph C GS
Suite 402
1515 W. Truman Rd.
Independence, MO 64050
816-254-9292

Evans, Lawrence L GS
4320 Wornall Suite 424
Kansas City, MO 64111
816-531-6652

***Everett, James E** FP
11319 Summit
Kansas City, MO 64114
816-942-7418

Fairchild, Robt C PD
24th & Gillham Rd.
Kansas City, MO 64108
816-234-3577

Farnham, Milo M IM
1515 W Truman Rd Suite 502
Independence, MO 64050
816-833-4466

Farrar, Michael W CD
2900 Baltimore Suite 415
Kansas City, MO 64108
816-756-0695

Farrell, Susan E PD
Chilren's Mercy Hospital
24th & Gillham Rd.
Kansas City, MO 64108
816-234-3674

Fedotin, Michael S GE
6420 Prospect Ste T407
Kansas City, MO 64132
816-333-5424

Fee, Chester F ORS
16960 S. Metcalf
Stilwell, KS 66085

Ferber, Alan J OBG
373 W. 101st Terrace
Kansas City, MO 64114
816-942-8200

Fernandez, Mark A IM
P.O.Box 980
224 Marshall Rd.
Platte City, MO 64079
816-464-2313

Ferns, Francis E OBG
4400 Broadway Suite 309
Kansas City, MO 64111
816-931-9344

Ferris, Carl R IM
C/o The Forum at Overland Pk
3501 W. 95th
Overland Park, KS 66206

Fibuch, Eugene E AN
St Lukes Hosp
44th And Wornal Rd
Kansas City, MO 64111
816-932-2033

Fisher, James K DR
710 Medical Plaza
4320 Wornall Rd.
Kansas City, MO 64111
816-531-9481

Fitzgerald, Robert H ORS
5219 West 96th Street
Shawnee Mission, KS 66207

Fitzmaurice, Laura S PD
Childrens Mercy Hosp
24th & Gillham Rd.
Kansas City, MO 64108
816-234-3669

FitzSimmons, James G DR
4320 Wornall Road
710 Medical Plaza
Kansas City, MO 64111
816-531-9481

Flatley, John A GS
P.O. Box 744
Belton, MO 64012

Fleming, Allan R HEM
Trinity Lutheran Dept/ONC
3030 Baltimore
Kansas City, MO 64108
816-751-2945

Fletcher, Robert C OPH
2900 Baltimore Ave. #520
Kansas City, MO 64108
816-531-0400

Flicker, Michele R IM
Marion Laboratories
P. O. Box 9627 HBC #3
Kansas City, MO 64137
816-966-5000

Flynn, James M PTH
Meyer & Prospect
Research Medical Center
Kansas City, MO 64132
816-276-4151

Fogel, Steven T OBG
1000 E. 50th St., Suite 300
Kansas City, MO 64110
816-444-2505

Folck, Wm P OM
Admiral At Oak Street
Kansas City, MO 64106
816-842-1146

Forgue, Donald R PD
Childrens Mercy Hosp
24th & Gillham Rd
Kansas City, MO 64108
816-234-3267

Forman, Louis H P
4320 Wornall Rd Suite 452
Kansas City, MO 64111
816-531-2325

Forsythe, Robert W NS
6457 Verona Rd.
Shawnee Mission, KS 66208

Forsythe, Lees C PUD
530 Medical Plaza
4320 Wornall Rd.
Kansas City, MO 64111
816-753-4312

Fortin, Felix D DR
4320 Wornall 710 Med Plaza
Kansas City, MO 64111
816-531-9481

Fouts, Dallas B IM
1515 W Truman Rd
Suite 301
Independence, MO 64050
816-836-8130

Fowler, Fred D NS
1247 W. 67th Terrace
Kansas City, MO 64113

Fowler, James W IM
12444 Linden
Leawood, KS 66209

Francisco, Clarence B N
24th & Gillham Rd.
Childrens Mercy Hosp
Kansas City, MO 64108
816-234-3090

***Frank, Robert A** IM
Suite 202 720 Oak
Kansas City, MO 64106
816-474-6690

Freeman, Jerry C OTO
3725 Broadway
Kansas City, MO 64111
816-931-2606

Freiden, Floyd J U
Rockhill Med. Plaza N.
6650 Troost Suite 206
Kansas City, MO 64131
816-333-5433

French, M. Devonne PD
Two Rivers Psychiatric Hosp
5121 Raytown Road
Kansas City, MO 64133
816-358-1100

Fried, John S ID
P. O. Box 7783
Overland Park, KS 66207
913-676-7085

---

*Doctor of osteopathy.

Friedman, Michael J IM
Dept of Anes St. Luke's Hosp
Wornall Rd. at 44th St.
Kansas City, MO 64111
816-932-2033

Friedman, Morris L IM
2516 W. 69th St.
Shawnee Mission, KS 66208

Fritzlen, Thos J PTH
Suite 126 1010 Carondelet Dr
Kansas City, MO 64114
816-942-8100

Fuhrman, Donald L D
3417 W. 68th St.
Shawnee Mission, KS 66208
913-362-3108

Furlong, Lawrence D DR
Suite 114 1010 Carondelet Dr
Kansas City, MO 64114
816-942-6902

Gaba, James E OM
4631 Orville Suite 103
Kansas City, KS 66102
816-596-2774

Galant, Mark R IM
17053 S. 71 Hiway
Belton, MO 64012
816-331-4000

Galblum, Larry I PTH
6550 B-C Troost Ave.
Kansas City, MO 64131
816-333-7888

Galbreath, Ashford M IM
4706 Broadway Suite 110
Kansas City, MO 64112
816-753-6112

Gard, Raymond F GS
7077 E. Central Apt 1
Wichita, KS 67206

Garfinkel, Lester S PM
3011 Baltimore
Kansas City, MO 64108
816-756-2250

Garrison, Roy F PD
404 W. 67th Terr.
Kansas City, MO 64113

Gauthier, Charles P PTH
2316 E Meyer Blvd
Kansas City, MO 64132
816-276-4151

Geier, Larry J IM
6420 Prospect Ave. Ste. T101
Kansas City, MO 64132
816-363-4100

Geiger, Wm A AN
6400 Prospect Suite 138
Kansas City, MO 64132
816-444-1139

Geller, Bruce D FP
Suite 210 6724 Troost
Kansas City, MO 64131
816-444-5900

Geraghty, Thomas E PS
4620 JC Nichols Pkwy Ste 503
Kansas City, MO 64112
816-455-3062

Germann, Donald R DR
710 Medical Plaza
4320 Wornall Rd
Kansas City, MO 64111
816-932-2550

Gholkar, Vijay R AN
St Luke's Hospital
44th & Wornall Rd.
Kansas City, MO 64111
816-932-2033

Gibbons, Robert T AN
8800 Ballentine
Overland Park, KS 66214
913-894-4050

Gibson, David M PTH
5049 Wornall Rd. 8F
Kansas City, MO 64112

Ginardi, Donald E IM
420 W. 98th St..
Kansas City, MO 64114
816-941-9200

Ginsberg, B. William GE
6420 Prospect Ste T407
Kansas City, MO 64132
816-333-5424

Giorgi, Lee V IM
4320 Wornall Rd. Suite 11-20
Kansas City, MO 64111
816-931-1883

Givler, Robt L PTH
Research Medical Center
2316 E. Meyer Blvd.
Kansas City, MO 64132
816-276-4151

Glaser, Larry F ORS
6724 Troost Ste 300
Kansas City, MO 64131
816-363-6500

Glazer, Melvin L IM
Suite 201 6650 Troost
Kansas City, MO 64131
816-363-7710

Glenski, James A PD
Suite 138
6400 Prospect
Kansas City, MO 64132
816-444-1139

Glotzbach, Ellen S PD
930 Carondelet Dr. #302
Kansas City, MO 64114
816-942-5437

Glueck, Robert M IM
4949 Rockhill Road
Kansas City, MO 64110
816-276-8260

Goerz, Ann A PD
Suite 304 205 W. RD Mize Rd.
Blue Springs, MO 64014
816-228-4770

Goerz, Royal D OBG
1515 W Truman Road #306
Independence, MO 64050
816-836-4200

Goetz, Joseph J DR
8900 Indian Creek Pkwy #450
Overland Park, KS 66210
913-469-8883

Goetz, Kenneth L OS
4856 Black Swan Drive
Shawnee Mission, KS 66216
816-932-2075

Goheen, John R PUD
930 Carondelet Suite 100
Kansas City, MO 64114
816-943-3994

Goldman, Stanley L A
5734 Windsor
Shawnee Mission, KS 66205

Goldman, Barry C IM
Suite 201 6650 Troost
Kansas City, MO 64131
816-363-7710

Goldsich, Edward OBG
4320 Wornall Rd. #520
Kansas City, MO 64111
816-531-9400

Goldstein, Marvin F OPH
6724 Troost
504 Highlands Prof Twr
Kansas City, MO 64131
816-333-7805

Good, Thomas H CD
Medical Plaza II-20
4320 Wornall Road
Kansas City, MO 64111
816-931-1883

Goolsbee, Robt L AN
1800 E. Meyer Blvd.
Kansas City, MO 64110
816-523-0100

***Gordon, Stephen M** OBG
Suite 304 930 Carondelet Dr.
Kansas City, MO 64114
816-943-2229

Gottsch, Joseph C ORS
2929 Baltimore Ave
#550 Pen Park Bldg.
Kansas City, MO 64108
816-531-6336

Gowdamarajan, Rengasamy PDC
24th & Gillham
Kansas City, MO 64108
816-234-3255

Graham, Wallace H GS
5157 Ward Parkway
Kansas City, MO 64112

Graham, Bruce D CRS
Suite 228 6400 Prospect
Kansas City, MO 64132
816-333-8688

Graham, Patrick G TS
1515 W. Truman Rd. #501
Independence, MO 64050
816-252-0600

Green, J. Richard GS
3143 Santa Fe Terr
Independence, MO 64055

Green, Thomas F OBG
17500 Med Ctr Parkway Ste 3
Independence, MO 64057
816-478-0220

***Greenspan, Peter B** OBG
1515 West Truman Rd. #306
Independence, MO 64050
816-836-4200

Griffin, Donald R AN
P. O. Box 11316
Kansas City, MO 64112
816-276-7901

Grimes, Elwyn M GYN
Suite 650B 3101 Broadway
Kansas City, MO 64111
816-931-2733

Growdon, John A GS
6508 Aberdeen Road
Shawnee Mission, KS 66208

Gruenebaum, Michael I IM
8630 Halsey
Lenexa, KS 66215
913-492-6600

Grunt, Jerome A PD
Childrens Mercy Hosp
24th & Gillham Rd.
Kansas City, MO 64108
816-234-3070

Guastello, Joseph R OTO
512 Medical Plaza
4320 Wornall Rd
Kansas City, MO 64111
816-753-5663

Guastello, Mario J OTO
Suite 512 4320 Wornall Road
Kansas City, MO 64111
816-753-5663

Guerra, Gaston G GS
2900 Baltimore Suite 101
Kansas City, MO 64108
816-561-5880

Gundle, Sigmund P
3806 W. 79th Terrace
Prairie Village, KS 66208
913-642-1048

Gunn, Richard W IM
317 North Van Brunt
Kansas City, MO 64123
816-231-7684

Gunnoe, Robert E D
6420 Prospect Suite T419
Kansas City, MO 64132
816-333-5266

Gupta, Mala R ID
Trinity Lutheran Hosp
3030 Baltimore Ave.
Kansas City, MO 64108
816-751-2330

Gura, George M CD
Medical Plaza 1120
4320 Wornall Rd.
Kansas City, MO 64111
816-931-1883

Gurba, Carol L AN
Dept of Anes 1000 Carondelet
Kansas City, MO 64114
816-943-2252

Gurba, Danny M ORS
4320 Wornall Rd. Suite 610
Kansas City, MO 64111
816-531-5757

Gustafson, Jon E R
Suite 128 4320 Wornall Rd.
Kansas City, MO 64111
816-561-5858

Gutek, E. Philip PS
4400 Broadway Ste 408
Kansas City, MO 64111
816-561-6633

Gutierrez, Anthony C IM
9150 E. 41st Terrace
Kansas City, MO 64113
816-356-5000

Gutknecht, Richard OBG
17500 Med Ctr Parkway Ste 3
Independence, MO 64057
816-478-0220

Haas, Harry D IM
624 Medical Plaza
4320 Wornall Rd
Kansas City, MO 64111
816-531-1813

Habib, Henry N U
VA Medical Center
65901 E. 7th St.
Long Beach, CA 90822

Hagen, Douglas W AN
6400 Prospect Suite 138
Kansas City, MO 64132
816-444-1139

Hahn, Bruce H GS
615 W. 3rd Street
Lee's Summit, MO 64063
816-524-3799

Hahn, Frederick W OTO
Suite 204 4801 Cliff Ave.
Independence, MO 64055
816-478-3555

Haight, J. Max FP
4601 Independence Ave.
Kansas City, MO 64124
816-231-4822

Haith, Walter F OBG
Prime Health Stadium
9150 E. 41st Terr
Kansas City, MO 64133
816-356-5000

***Hall, Frederick K** NPM
Children's Mercy Hosp
24th & Gillham
Kansas City, MO 64108
816-234-3593

---

*Doctor of osteopathy.

Hall, John C D
416 Broadway Med Bldg.
4400 Broadway
Kansas City, MO 64111
816-561-7783

Hall, Robt T PD
24th Gillham Road
Kansas City, MO 64108
816-234-3593

Halperin, Phillip H GS
8348 Somerset
Shawnee Mission, KS 66207

Hamburg, Mitchell S IM
4400 Broadway
Kansas City, MO 64111
816-756-2520

Hamburger, Stephen C IM
4409 W. 93rd
Shawnee Mission, KS 66207
913-276-1807

Hamill, Robert W IM
1107 59th Street South
Gulfport, FL 33707

Hannah, Hamner CDS
4949 Rockhill Rd. Suite 2203
Kansas City, MO 64110
816-276-8250

Hannas, Ralston R EM
11812 Avila Dr
Kansas City, MO 64114

Hansen, Thomas L PD
17500 Medical Center Pkway
Suite 5
Independence, MO 64057
816-373-1111

Hanson, E J NS
4320 Wornall Rd Ste 328
Kansas City, MO 64111
816-931-1150

Hanson, Karl H HEM
4320 Wornall Ste 212
Kansas City, MO 64111
816-531-0930

Harbrecht, James J CD
Suite 4011 Medical Plaza
4320 Wornall Rd.
Kansas City, MO 64111
816-531-5510

Hardacre, Ruth A GP
5125 Swope Pkwy #1116
Kansas City, MO 64130

Hardy, Henry M AN
44th & Wornall Rd.
Kansas City, MO 64111
816-931-2033

Hardy, John W IM
1100 Walnut St. Room 606
P. O. Box 419418
Kansas City, MO 64141
816-654-2765

Harless, Morris S GS
Rt 4 Box 85
Galena, MO 65656

Harlow, Richard J IM
17053 S. 71 Highway #101
Belton, MO 64012
816-331-4000

Harris, David J PD
Childrens Mercy Hosp
24th At Gillnam Rd
Kansas City, MO 64108
816-234-3290

Harris, Lanny W ORS
Suite T415
6420 Prospect
Kansas City, MO 64132
816-523-1520

Harris, Weldon L PD
17500 Medical Center Pkway
Suite 5
Independence, MO 64057
816-373-1111

Harrison, Garth F PUD
Suite T303 6420 Prospect
Kansas City, MO 64132
816-333-1919

Hart, L. Wayne CHP
4400 Broadway Ste 202
Kansas City, MO 64111
816-561-2025

Hartwig, Frederick H GS
Suite T501-6420 Prospect
Kansas City, MO 64132
816-333-8151

Hartwig, Raymond W R
8900 Indian Creek Pkwy #450
Overland Park, KS 66210
913-469-8883

Hartzler, Geoffrey O CD
Medical Plaza 1120
4320 Wornall Rd.
Kansas City, MO 64111
816-931-1883

Hausheer, Herman J OBG
1515 W Truman Rd Ste 30
Independence, MO 64050
816-836-4200

Hayes, Kimberly W OBG
1515 W. Truman Road Ste 306
Independence, MO 64050
816-836-4200

Hazen, Robt M OTO
9919 Ensley Lane
Leawood, KS 66206

Hazuka, David F DR
Suite 128 4320 Wornall Rd.
Kansas City, MO 64111
816-561-5858

Hedge, S. Roy CD
6650 Troost Suite 106
Kansas City, MO 64131
816-444-7444

Hellerstein, Stanley PD
Childrens Mercy Hosp
24th & Gillham Rd.
Kansas City, MO 64108
816-234-3010

Helling, Thomas S GS
308 Medical Plaza
4320 Wornall Road
Kansas City, MO 64111
816-753-7460

Hellman, Richard IM
2940 Baltimore Suite 400
Kansas City, MO 64108
816-561-7800

Helzberg, John H GE
4320 Wornall Road #332
Kansas City, MO 64111
816-561-2000

Henry, Clarke L TS
6219 Reinhardt Drive
Shawnee Mission, KS 66205

Henry, Clarke L CD
Suite 330 2929 Baltimore
Kansas City, MO 64108
816-531-0118

Henry, Mary M PTH
Ost-Talbott-Smith Pth Assoc
6550 B-C Troost
Kansas City, MO 64131
816-333-7888

Henson, Bruce E IM
Suite T101
6420 Prospect
Kansas City, MO 64132
816-363-4100

Herdoiza, Alfonso W AN
5300 W. 98th Terrace
Overland Park, KS 66207

Herman, Robert L CD
Rockhill Cardiology Group
6650 Troost Suite 106
Kansas City, MO 64131
816-444-7444

Hervey, Wm H AN
Wornall Rd At 44th
Kansas City, MO 64111
816-932-2033

Heryer, John W CRS
4320 Wornall Rd.
Suite 320
Kansas City, MO 64111
816-531-5648

Hicks, Ralph A PD
One Children's Plaza
Dayton, OH 45404
513-226-8484

Hierholzer, Rebecca S EM
N Kansas City Hospital
2800 Hospital Dr.
Kansas City, MO 64116
816-346-7983

Higgins, Edward F CDS
Suite T 505 6420 Prospect
Kansas City, MO 64132
816-361-3988

Higgins, Ronald A D
340 Carondelet Med Off
1010 Carondelet Dr
Kansas City, MO 64114
816-942-1150

Hill, Jack H PTH
8115 Meadow Lane
Leawood, KS 66206

Hink, Frederick W FP
3497 Shady Bend Dr.
Independence, MO 64052

Hinson, Gary W R
Menorah Medical Center
4949 Rockhill Road
Kansas City, MO 64110
816-276-8078

Hodgson, Frank H GP
11605 W. 116th St.
Overland Park, KS 66210

Hoech, Geo P AN
Anesthesia Associates of KC
6400 Prospect-Suite 138
Kansas City, MO 64132
816-444-1139

Hoeper, Samuel D IM
400 W. 123 Terrace
Kansas City, MO 64145
816-761-5588

Hoeper, Samuel D FP
Suite 300 6400 Prospect
Kansas City, MO 64132
816-333-5092

Hof, David G PUD
530 Medical Plaza
4320 Wornall Rd.
Kansas City, MO 64111
816-753-4312

Hoffmann, Alan L FP
6300 Evanston
Kansas City, MO 64133
816-353-1191

Hoffmann, Lee M N
4914 Belinder Rd.
Shawnee Mission, KS 66205
816-556-3489

Holbrook, C. R. EM
1000 Carondelet Dr.
St. Joseph Health Ctr
Kansas City, MO 64114
816-943-2710

Holder, Thos M PDS
509 Broadway Med Bldg
4400 Broadway
Kansas City, MO 64111
816-931-5538

Holleman, David N PD
4400 Broadway Suite 206
Kansas City, MO 64111
816-561-8100

Hollinger, Lloyd A PUD
6700 Troost #244
Kansas City, MO 64131
816-444-4700

Holman, Jos G A
4620 J C Nichols Pkwy
Kansas City, MO 64112
816-561-8500

Holt, Peter S IM
4320 Wornall Rd. Suite 208
Kansas City, MO 64111
816-531-0552

Holton, Edward B OM
Thomas J. Lipton, Inc.
13000 East 35th St.
Independence, MO 64055
816-833-1700

Hood, Roger W ORS
8300 College Blvd. Suite 105
Shawnee Mission, KS 66210
913-451-9310

Hoopes, Phillip C OPH
5520 College Blvd. Suite 201
Overland Park, KS 66211
913-491-3737

Hopkins, James P PS
6650 Troost Suite 208
Kansas City, MO 64131
816-523-7811

Horine, Jon A IM
Suite 201 6650 Troost
Kansas City, MO 64131
816-363-7710

Hornig, Gregory W NS
Suite 328 4320 Wornall Road
Kansas City, MO 64111
816-931-1150

Hornstra, Robijn K P
600 E. 22nd
Kansas City, MO 64108
816-471-3000

Hoskins, R. Bruce R
St. Lukes Hospital
44th & Wornall
Kansas City, MO 64111
816-932-2575

Houston-Dittmer, Monica T IM
Allied-Signal Aerospace #560
P. O. Box 41959
Kansas City, MO 64141
816-997-3200

Howard, Campbell P PD
Children's Mercy Hosp.
24th And Gillham Rd.
Kansas City, MO 64108
816-234-3072

Hubbell, Marius M PDC
Children's Mercy Hospital
24th At Gillham Rd.
Kansas City, MO 64108
816-234-3255

Huet-Vaughn, Yolanda FP
5799 Broadmoor
Mission, KS 66202
913-722-5000

Hughes, Michael F OTO
1010 Carondelet Dr.
Suite 224
Kansas City, MO 64114
816-942-7200

---

*Doctor of osteopathy.

Hull, Timothy A AN
1000 Carondolet
Kansas City, MO 64114
816-942-4400

Hunkeler, John D OPH
2900 Baltimore
Suite 650
Kansas City, MO 64108
816-931-4733

Hunzicker, Warren J IM
1248 Stratford Rd.
Kansas City, MO 64113

Hurley, Martha L OBG
1900 Copper Oaks Circle
Blue Springs, MO 64015
816-228-9331

Huse, William J OBG
Suite 304 930 Carondelet Dr.
Kansas City, MO 64114
816-943-2229

Hustead, Russell M OBG
1010 Carondelet Suite 328
Kansas City, MO 64114
816-941-0700

Hustead, Virginia A PD
Children's Mercy Hospital
24th at Gillham Rd.
Kansas City, MO 64108
816-234-3592

Huston, Kent A RHU
Suite 212 4320 Wornall Rd.
Kansas City, MO 64111
816-531-0930

Hyde, Lawrence L OPH
3101 Broadway Suite 990
Kansas City, MO 64111
816-753-8070

Hyde, Rita M IM
1500 N.E. Parvin Rd.
Kansas City, MO 64116
816-452-4000

Idstrom, Mark E DR
Research Rad Group, Inc
6400 S. Prospect #310
Kansas City, MO 64132
816-276-4141

Inciardi, Marc F R
Dept of Rad 4949 Rockhill Rd
Kansas City, MO 64110
816-276-8201

Ingham, Walton C GS
9723 Overbrook Road
Shawnee Mission, KS 66206

Inniss, Rosalyn E CHP
222 W. Gregory Suite 234
Kansas City, MO 64114
816-363-2995

Irvine, John W OPH
6650 Troost Ave. #300
Kansas City, MO 64131
816-333-7376

Irwig, Fred IM
6555 W. 75th St. #104
Overland Park, KS 66204

Jackson, Dorothy J IM
205 W. R. D. Mize Rd.
Blue Springs, MO 64015
816-228-9841

Jackson, Jay A CD
930 Carondelet Dr. Suite 201
Kansas City, MO 64114
816-943-3955

Jackson, Mary Anne PD
Children's Mercy Hospital
24th at Gilliam
Kansas City, MO 64108
816-234-3795

Jackson, Max G FP
Research Medical Center
2316 E. Meyer Blvd.
Kansas City, MO 64132
816-276-4256

Jacobs, Morton P
6416 Verona Rd.
Shawnee Mission, KS 66208

Jacobs, Walter H GE
6724 Troost Ave. #710
Kansas City, MO 64131
816-333-6000

James, Otis E ORS
7929 Bristol Court
Shawnee Mission, KS 66208

Jantz, Keith IM
Kansas City Internal Med.
6420 Prospect #T101
Kansas City, MO 64132
816-363-4100

Jelley, V. Carl ORS
1515 W. Truman Rd. Suite 401
Independence, MO 64050
816-254-4800

Jenkins, David C CLP
4117 Adams Apt 201
Kansas City, KS 66103

Jennett, J H IM
Apt. 1006 - 333 Meyer West
Kansas City, MO 64113

Jernstrom, Vance R MFS
4320 Wornall Ste 512
Kansas City, MO 64111
816-753-5663

Johnson, C. L. U
729 S. 53rd St.
Kansas City, KS 66106

Johnson, Thos M GS
8127 El Monte
Shawnee Mission, KS 66208

Johnson, Dallas A D
6700 Troost Ste 504
Kansas City, MO 64131
816-333-4943

Johnson, Gareth R PTH
23rd St. & RD Mize Rd.
Independence, MO 64057
816-373-2300

Johnson, James S OBG
79th & Lee's Summit Rd.
Kansas City, MO 64139
816-373-4415

Johnson, Joseph E FP
11201 Colorado
Kansas City, MO 64137
816-763-5200

Johnson, Joy A R
6650 Troost Suite 210
Kansas City, MO 64131
816-363-5606

Johnson, Richard L IM
P. O. Box 139
Kansas City, MO 64141
816-753-7000

Johnson, Warren L CD
Medical Plaza 1120
4320 Wornall Rd
Kansas City, MO 64111
816-931-1883

Jonas, Harry S OBG
Apt 2903 400 E. Ohio
Chicago, IL 60611

Jones, Elizabeth A IM
5799 Broadmoor
Mission, KS 66202
816-722-5010

Jones, Gale O AN
Anesthesia Associates of KC
6400 Prospect-Suite 138
Kansas City, MO 64132
816-444-1139

Jones, Lowry ORS
4320 Wornall Road Suite 720
Kansas City, MO 64111
816-753-5102

Jones, Maynard C DR
Suite 128 4320 Wornall Rd.
Kansas City, MO 64111
816-561-5858

Jones, Patricia E PD
9150 E. 41st Terrace
Kansas City, MO 64133
816-356-5000

Jones, Randall W PTH
Independence Reg Hlth Ctr.
1509 W. Truman Rd.
Independence, MO 64050
816-836-8100

Jones, Robert P ORS
402 St. Marys Prof. Bldg.
205 West Rd - Mize Rd
Blue Springs, MO 64014
816-229-6800

Jones, T. Reid IM
6341 Roe Ave.
Shawnee Mission, KS 66208
913-362-9669

Joyce, Rex M GS
6420 Prospect Suite 501-T
Kansas City, MO 64132
816-333-8191

Joyce, Steven T ORS
610 Medical Plaza
4320 Wornall Rd.
Kansas City, MO 64111
816-531-5757

Justus, John B IM
5221 Howe Drive
Shawnee Mission, KS 66205

Kagan, Stuart M PD
10640 W. 87th Street
Overland Park, KS 66214
913-894-6600

Kahn, Marvin A
Statland Clinic
6724 Troost Ste.710
Kansas City, MO 64131
816-333-6000

Kanarek, Joseph PD
601 E 63rd St Ste. 311
Kansas City, MO 64110
816-333-8666

Kantor, Julius M PD
6708 High Drive
Mission Hills, KS 66208

Kantor, Samuel OPH
9723 E. Maplewood Ave.
Englewood, CO 80111

Kapitan, Kent S PUD
6420 Prospect Suite T303
Kansas City, MO 64132
816-333-1919

Kartus, Irving P
9010 High Drive
Shawnee Mission, KS 66206

Kase, James B CDS
2929 Baltimore Suite 330
Kansas City, MO 64108
816-531-0118

Kaufman, Andrew B NS
Suite 411 6420 Prospect
Kansas City, MO 64132
816-363-2500

Kaufmann, Herbert H OBG
1000 E. 50th St. Suite 300
Kansas City, MO 64110
816-444-2505

Kayanan, Jose C GS
11019 Wabash
Kansas City, MO 64131

Keairnes, Harold W IM
6700 Troost Suite 40
Kansas City, MO 64131
816-444-6122

Keitges, Pierre W PTH
Physicians Ref. Lab.
1010 W. Carondelet Dr
Kansas City, MO 64114
816-942-8100

Kelly, Charles R PM
St. Luke's Hosp
44th And Wornall Rd.
Kansas City, MO 64111
816-932-2020

Keltner, Raymond O OBG
4400 Broadway Suite 302
Kansas City, MO 64111
816-753-7060

Kendall, Charles A IM
4240 Blue Ridge Blvd #500
Kansas City, MO 64133
816-356-8877

Kendall, Forrest H OTO
Suite 224
1010 Carondelet Dr
Kansas City, MO 64114
816-942-7200

Kennedy, Timothy D R
8900 Indian Creek Pkwy #450
Overland Park, KS 66210
913-469-8883

Kenney, John D AN
1000 E. 50th Suite 340
Kansas City, MO 64110
816-333-7484

Kent, Bela K OBG
5839 Cherokee
Shawnee Mission, KS 66205

Kerr, Harold H TS
41 Poquito Rd.
Shalimar, FL 32579

Ketterman, Grace H CHP
Crittenton Center
10918 Elm Ave.
Kansas City, MO 64134
816-765-6600

Khoury, Cecile S AN
1000 Carondelet Dr.
Kansas City, MO 64114
816-942-4400

Khurana, Satish K PD
Prime Health
8630 Halsey
Lenexa, KS 66215
913-492-6600

Kilbride, Howard W PD
Children's Mercy Hosp
24th & Gillham Rd.
Kansas City, MO 64108
816-234-3591

Killen, Duncan A TS
Medical Plaza II 50
4320 Wornall Rd
Kansas City, MO 64111
816-931-7743

Killion, Linza T U
Suite 240 4320 Wornall Rd.
Kansas City, MO 64111
816-753-2033

Kimball, Merritt H AN
610 E 36th
Kansas City, MO 64109

Kimble, Harvey S AN
1000 Carondelet Dr.
Kansas City, MO 64114
816-943-2252

Kindred, Lynn H CD
40 11 Medical Plaza
4320 Wornall Rd.
Kansas City, MO 64111
816-531-5510

•Doctor of osteopathy.

King, J. Tenbrook CD
8228 Linden Drive
Prairie Village, KS 66208

Kingsbury, Helen AN
3601 Somerset Dr.
Shawnee Mission, KS 66208
913-381-1118

Klein, Edward H GS
7011 Roe Ave
Shawnee Mission, KS 66208

Knapp, Jane F PD
Children's Mercy Hospital
24th at Gillham Rd.
Kansas City, MO 64108
816-234-3689

Knight, Lyle B GP
606 Shamrock Apt 106
Lee's Summit, MO 64063

Knoch, H. Kermit OBG
6606 Willow Lane
Shawnee Mission, KS 66208

Koontz, Paul G GS
308 Medical Plaza
4320 Wornall Road
Kansas City, MO 64111
816-753-7460

Kopp, Kenneth R IM
8630 Halsey
Lenexa, KS 66215
913-492-6600

Koppers, Lawrence E END
4320 Wornall Rd.
Med Plaza II Suite 55
Kansas City, MO 64111
816-561-6464

Koury, William C R
4320 Wornall Rd Ste 710
Kansas City, MO 64111
816-531-9481

Kraft, Jacob GS
Suite 105 6650 Troost
Kansas City, MO 64131
816-523-1050

Kranson, Seymour J PD
909 W Johnston Ave.
Hemet, CA 92343

Krebs, Festus J OTO
Suite 208 6400 Prospect
Kansas City, MO 64132
816-444-4660

Krishna, Padma PD
Samuel U. Rodgers Health Ctr
825 Euclid
Kansas City, MO 64124
816-474-4920

Krug, Paul E AN
3030 Baltimore
Kansas City, MO 64108
816-751-2455

Kunz, Stephen R R
Suite 128 4320 Wornall Rd
Kansas City, MO 64111
816-561-5858

Kurtz, Karl J U
4400 Broadway
Suite 412
Kansas City, MO 64111
816-561-7200

Kyger, John E AN
2400 R. D. Mize Rd.
Independence, MO 64057

LaBach, James P PTH
Physicians Reference Lab
1010 W. Carondelet
Kansas City, MO 64114
816-942-8100

Labayen, Ricardo A EM
4949 Rockhill Rd.
Kansas City, MO 64110
816-276-8271

Labrie, Paul L GS
Independence Surgical Clinic
17221 E 23rd St. #207
Independence, MO 64057
314-373-4646

Lally, James J GS
5760 Windsor Circle
Shawnee Mission, KS 66205

Lamb, Jerome P PS
100 NW Mock Suite 202
Blue Springs, MO 64015
816-229-9699

Landers, Burnell GE
4240 Blue Ridge Blvd. #801
Kansas City, MO 64133
816-358-0630

Landis, Geo K IM
1304 West Johns Blvd.
Raymore, MO 64083

Landsman, Ira S PD
Children's Mercy Hospital
24th & Gillham Rd.
Kansas City, MO 64108
816-234-3668

Langley, Harriet S NEP
1000 E. 50th St. Suit 405
Kansas City, MO 64110
816-444-7300

Lapi, Angelo PTH
2012 Stratford Rd
Shawnee Mission, KS 66208
913-362-4127

Larsen, Wm E HEM
10311 Belinder
Shawnee Mission, MO 66206

Latham, Raymond W PD
206 Broadway Med. Building
4400 Broadway
Kansas City, MO 64111
816-561-8100

Lauer, Danl J IM
236 Medical Plaza
4320 Wornall Rd
Kansas City, MO 64111
816-531-2020

Laughlin, Edward J IM
1515 W. Truman Rd. #602
Independence, MO 64050
816-461-6837

Laughlin, Thomas P AN
Anesthesia Associates of KC
6400 Prospect-Suite 138
Kansas City, MO 64132
816-444-1139

Layle, John K RHU
212 Medical Plaza
4320 Wornall Rd.
Kansas City, MO 64111
816-531-0930

Layton, Ira C IM
4010 Washington - Suite 100
Kansas City, MO 64111
816-531-3908

Lederer, Charles M OPH
6650 Troost Suite 310
Kansas City, MO 64131
816-333-3525

Lednicky, Jay A IM
615 W. Third St.
Lee's Summit, MO 64063
816-524-3799

Lee, Tae H NEP
9718 Sagamore Drive
Leawood, KS 66206

Lee, Charles K CDS
6700 Troost Suite 500
Kansas City, MO 64131
816-361-9508

Lee, Henry A R
12472 Linden
Leawood, KS 66209

Lee, King Y OPH
6650 Troost Ave. Suite 300
Kansas City, MO 64131
816-333-7376

Leese, Philip T EM
5100 E. 24th St.
Kansas City, MO 64127
816-483-1850

Legarda, Maria M N
Suite 400 6724 Troost
Kansas City, MO 64131
816-444-4082

Legler, Larry E FP
17611 E. 24th Highway
Independence, MO 64056
816-257-7787

Leibsohn, Joel M OPH
1515 W Truman Rd
Suite 505
Independence, MO 64050
816-836-8166

Leifer, William W U
#103 121 W. 48th St.
Kansas City, MO 64112

Leifer, Gary U
Rockhill Medical Plaza N.
6650 Troost Suite 206
Kansas City, MO 64131
816-333-0500

Lentz, Clark H OM
2600 W. 69th St.
Shawnee Mission, KS 66208

Lentz, Harold C U
1515 W. Truman Rd.
Suite 404
Independence, MO 64050
816-836-8831

Lerner, Bruce AN
2400 R.D. Mize Rd. Ste 1
Independence, MO 64057
816-373-0263

Lerner, Scott A PUD
4320 Wornall Suite 510
Kansas City, MO 64111
816-756-2255

Letizia, Wayne L IM
1210 Ash Avenue
Independence, MO 64052
816-252-7800

Levi, Bernard CD
4949 Rockhill Rd.
Kansas City, MO 64110
816-276-8260

Lewis, Frank H IM
500 Blue Ridge Tower
4240 Blue Ridge Blvd.
Kansas City, MO 64133
816-356-8877

Lewis, Revis C NS
425 Penn Park
2929 Baltimore
Kansas City, MO 64108
816-561-8288

Liang, Jing C GS
17221 E 23rd
Independence, MO 64057
816-373-4646

Lichtor, Jos M ORS
6724 Troost Suite 409
Kansas City, MO 64131
816-363-5442

Liliedahl, Roger L AN
P. O. Box 11316
Kansas City, MO 64112
816-276-7901

Lindgren, Carleton J P
12805 E. 38th St.
Independence, MO 64055
816-358-6262

Link, Vance E FP
Suite 302
1515 W. Truman Rd.
Independence, MO 64050
816-836-8200

Lintecum, Frederick B OBG
4320 Wornall Rd. Suite 520
Kansas City, MO 64111
816-531-9400

Linville, Howard E GS
9905 Cherokee Lane
Shawnee Mission, KS 66206

Liu, Ben C OBG
373 W. 101st Terrace
Kansas City, MO 64114
816-942-8200

Lockwood, Gary F OBG
4320 Wornall Rd Ste 520
Kansas City, MO 64111
816-531-9400

Lockwood, Ted E PS
408 Broadway Medical Bldg.
4400 Broadway
Kansas City, MO 64111
816-561-6633

Lofgreen, Craig S FP
6300 Enterprise Suite 110
Kansas City, MO 64120
816-231-3611

Loftus, Loretta S HEM
UMKC School Of Medicine
2411 Holmes
Kansas City, MO 64108
816-276-1934

Lohrentz, Lois H AN
2800 W 50th Terrace
Shawnee Mission, KS 66205

Long, R. Stacy FP
6601 Rockhill Road
Kansas City, MO 64131
816-276-7600

Lopez-Plata, Roberto GS
1010 Carondelet Dr. #208
Kansas City, MO 64114
816-941-0279

Loren, Michael L PDA
17500 Medical Center Parkway
Suite 6
Independence, MO 64057
816-478-1500

Lorenzo, Edilberto B CHP
600 W. 103rd St. Suite 203
Kansas City, MO 64114
816-361-7476

Loutzenhiser, James K P
1010 Carondelet Dr.
Suite 424
Kansas City, MO 64114
816-942-8445

Lozoff, Richard D GE
6650 Troost Suite 108
Kansas City, MO 64131
816-444-7050

Ludwikosky, Mikel A AN
Lee's Summit Community Hosp
530 N. Murray
Lee's Summit, MO 64063
816-525-2950

Luetje, Charles M OTO
3100 Broadway Suite 509
Kansas City, MO 64111
816-531-7373

---

*Doctor of osteopathy.

Lyddon, Harold R FP
1221 W. 67th St.
Kansas City, MO 64113

Lynch, Gerald C AN
6400 Prospect Suite 138
Kansas City, MO 64132
816-444-1139

Lytle, Michael F AN
2001 W 61st Terrace
Mission Hills, KS 66208
816-444-1139

Maben, Sam E IM
9150 E. 41st Terr.
Kansas City, MO 64113
816-356-5000

MacDonald, Robin R DR
6650 Troost, Suite 210
Kansas City, MO 64131
816-363-5606

MacGee, Edwin E NS
4440 Broadway
Kansas City, MO 64111
816-561-4655

MacInnis, Florence E PUD
9311 Briarwood Circle
Sun City, AZ 85351

MacNaughton, Ralph E R
Carondelet Radiology In
1010 Carondelet Rm 114
Kansas City, MO 64114
816-942-6900

MacNaughton, Robert A R
114 Carondelet Med Bldg.
1010 Carondelet Dr.
Kansas City, MO 64114
816-942-6900

Mahmoud, Said F PUD
2900 Baltimore
Suite 350
Kansas City, MO 64108
816-753-1271

Mais, Thomas E R
Suite 128 4320 Wornall Rd.
Kansas City, MO 64111
816-561-5858

Majure-Lees, Joyce E FP
930 Carondelet Dr. Suite 301
Kansas City, MO 64114
816-942-0822

Maliszewski, James A IM
6420 Prospect Suite T101
Kansas City, MO 64132
816-363-4100

Mallouk, Alexander G IM
4320 Wornall Rd Ste 514
Kansas City, MO 64111
816-931-6712

Mallow, James E AN
1000 Carondelet Dr.
Kansas City, MO 64114
816-942-4400

Mangum, William B OTO
434 Blue Ridge Tower
4240 Blue Ridge Blvd
Kansas City, MO 64133
816-358-7177

Manion, Thos S U
1515 W. Truman Rd. Suite 507
Independence, MO 64050
816-254-6116

Manuel, Louis C OPH
601 Citadel Bldg.
1734 E. 63rd St.
Kansas City, MO 64110
816-363-4700

Markway, Gregory A FP
17611 E. 24th Highway
Independence, MO 64056
816-257-7787

Marr, Garrett L GS
930 Carondelet Dr. Suite 301
Kansas City, MO 64114
816-941-7782

Marsh, Alice PD
323 N. Campbell St.
Pleasant Hill, MO 64080

Marshall, Hal E PTH
Menorah Medical Center
4949 Rockhill Rd.
Kansas City, MO 64110
816-276-8262

Martin, Mark W FP
300 S.E. 2nd St.
Lee's Summit, MO 64063
816-524-2626

Maslan, Mark J OTO
6724 Troost Suite 200
Kansas City, MO 64131
816-333-6996

Matile, Gerald U OBG
4400 Broadway Suite 309
Kansas City, MO 64111
816-931-9344

Matovich, Violet B N
UMKC School of Medicine
2411 Holmes
Kansas City, MO 64108
816-276-1910

Matson, Jeffrey A AN
138 Research Med. Bldg.
6400 Prospect
Kansas City, MO 64132
816-444-1139

Maulik, Dev OBG
Truman Med Ctr OB/GYN Dept
2301 Holmes
Kansas City, MO 64108
816-556-3534

Mayer, John H TS
3030 Baltimore
Kansas City, MO 64108

Maynard, Colleen M OBG
930 Carondolet Suite 304
Kansas City, MO 64114
816-943-2229

McCallister, Ben D CD
4320 Wornall Med Plaza II-20
Kansas City, MO 64111
816-931-1883

McCanse, Andrew GS
Industrial Clinic North
2025 Swift
No. Kansas City, MO 64116
816-221-0058

McConahay, David R CD
4320 Wornall Med Plaza II-20
Kansas City, MO 64111
816-931-1883

McConchie, James E R
19839 Alta Loma Dr.
Sun City West, AZ 85375

McCormack, Robert E IM
9150 E. 41st Terr
Kansas City, MO 64133
816-356-5000

McCormick, Francis P IM
4801 E. Linwood Blvd.
Kansas City, MO 64128
816-861-4700

McCoy, Frederick J PS
4177 Broadway
Kansas City, MO 64111
816-561-1414

McCroskey, Lon C GS
Room T505 Research Towers
6420 Prospect
Kansas City, MO 64132
816-361-3988

McDonald, Herbert L TS
4121 W. 83rd St. Suite 132
Prairie Village, KS 66208
913-649-6677

McDonnell, John F IM
4320 Wornall 440 Med Plaza
Kansas City, MO 64111
816-753-3243

McFarland, H. R. N
4320 Wornall #620 Med Plaza
Kansas City, MO 64111
816-561-4611

McGuire, Thomas H OBG
Suite 320 10600 Quivira Rd.
Shawnee Mission, KS 66215
913-541-3200

McGurk, Thomas E P
Care Psych Unit
6602 Rockhill Rd.
Kansas City, MO 64131
816-276-7768

McIntosh, Donald E AN
Suite 138 6400 Prospect
Kansas City, MO 64132
816-444-1139

McIntosh, Michele C PD
11200 Winner Rd.
Independence, MO 64052
816-836-4300

McIntyre, John D AN
3238 Gillham Rd.
Kansas City, MO 64109
816-561-7445

McKee, Wallace P IM
St. Luke's Lenexa Clinic
8704 Bourgade
Lenexa, KS 66219
913-492-0336

McKeel, Thos B IM
615 Highland Prof
6724 Troost
Kansas City, MO 64131
816-444-9348

McKinley, Lois J IM
Suite 350 1000 E. 50th St.
Kansas City, MO 64110
816-361-9615

McKinsey, David S ID
2316 E. Meyer Blvd.
Kansas City, MO 64132
816-276-4038

McKnelly, Wm V P
Dept of Psych KUMC
39th & Rainbow Blvd.
Kansas City, KS 66103
816-588-6493

McLaughlin, Durnell OPH
1000 E. 50th St. #210
Kansas City, MO 64110
816-361-1515

McLemore, Willie O IM
6700 Troost #408
Kansas City, MO 64131
816-523-5660

McLeod, Alan J R
Suite 7110 4320 Wornall Rd.
Kansas City, MO 64111
816-932-2550

McMeekin, Sheila P PTH
St. Joseph Health Center
1000 Carondelet Drive
Kansas City, MO 64114
816-942-4400

McMurray, Earlene H ONC
6650 Troost Suite 110
Kansas City, MO 64131
816-363-2100

McMurray, Timothy I IM
12801 Indian School Rd. N.E.
Dept. 807
Albuquerque, NM 87112

McNitt, Jay D AN
St. Lukes Hosp Anes Dept
4400 Wornall
Kansas City, MO 64111
816-932-2033

McPhee, Mark S IM
4320 Wornall Rd. Suite 332
Kansas City, MO 64111
816-561-2000

McVey, Pamela S EM
3101 Broadway #1000
Kansas City, MO 64111
816-561-1025

McWherter, Lottie B
5920 Nall Suite 308
Mission, KS 66202
913-362-1464

Medlicott, William J ORS
611 Polk
Port Townsend, WA 98368

Meegan, Robt J R
8900 Indian Creek Pkwy #450
Overland Park, KS 66210
913-469-8883

Meiklejohn, Duncan C OBG
1900 Copper Oaks Circle
Blue Springs, MO 64015
816-228-9331

Melgaard, Sven R AN
12887 Cambridge Circle
Leawood, KS 66209

Melia, B J D
216 Carondelet Medical Bldg.
1010 Carondelet Dr.
Kansas City, MO 64114
816-942-4336

Mertz, Janet S OTO
6724 Troost Ave. #208
Kansas City, MO 64131
816-361-6013

Mestad, Peter H AN
Anesthesia Associates
6400 Prospect Suite 138
Kansas City, MO 64132
816-444-1139

Meyer, Paul W ORS
11936 Belinder Rd
Shawnee Mission, KS 66209

Michelson, Richard B GPM
Blue Cross & Blue Shield
2301 Main St.
Kansas City, MO 64108
816-395-3980

Miles, Geo O GS
37 Compton Ct.
Shawnee Mission, KS 66208

Milgram, Byron A P
6724 Troost #807
Kansas City, MO 64131
816-444-5161

Miller, Gayle P TR
8900 Indian Creek Pkwy #450
Overland Park, KS 66210
913-469-8883

Miller, Gerald L OBG
Research Off Towers Bldg
T301
Kansas City, MO 64132
816-444-6888

Miller, John T CD
2929 Baltimore Suite 415
Kansas City, MO 64108
816-756-0695

Miller, Michael R IM
Samuel U. Rogers Hlt Ctr.
825 Euclid Ave.
Kansas City, MO 64124
816-474-4920

---

*Doctor of osteopathy.

Miller, Wilson H IM
6420 Prospect Ave.
Suite T305
Kansas City, MO 64132
816-444-4114

Millet, Ruth E PTH
4949 Rockhill Road
Kansas City, MO 64110
816-276-8262

Minnigerode, Lana K PM
10950 Glen Arbor Road
Kansas City, MO 64114

Minnigerode, Turner L IM
Research Hosp. & Med. Ctr.
2316 E. Meyer Blvd.
Kansas City, MO 64132
816-276-4167

Mir, A. Rauf NEP
1000 E. 50 #405
Kansas City, MO 64110
816-444-7300

Mitchell, Andrew D U
4013 West 73rd Terrace
Prairie Village, KS 66208

Mitchell, John D U
2900 Baltimore Suite 540
Kansas City, MO 64108
816-561-7414

Mitchell, Mark A GPM
414 E. 12th St
KC,MO Health Dept
Kansas City, MO 64106
816-274-1381

Mitchell, Robt H OBG
1006 Grand Ave.
Suite 1134
Kansas City, MO 64106
816-471-1330

Mitchem, Olevia IM
2929 Baltimore Suite 419
Kansas City, MO 64108
816-756-0695

Mitra, Nirmal K PD
11201 Colorado
Kansas City, MO 64137
816-761-0775

Mittleman, Frederick S P
4205 W. 102 St.
Overland Park, KS 66207
913-523-8425

Mongan, James J OS
Truman Medical Center
2301 Holmes
Kansas City, MO 64108
816-556-3153

Montello, Samuel A GYN
Suite 320 10600 Quivira Rd.
Shawnee Mission, KS 66215
816-541-3200

Montgomery, Michael A CD
2929 Baltimore
Kansas City, MO 64108
816-756-0695

Mook, David G IM
373 W. 101st Terrace
Kansas City, MO 64114
816-942-8200

Mooney-Smith, Patricia OBG
2700 N. Hospital Dr. 360
Kansas City, MO 64116
816-421-3115

Moore, David L GS
4400 Broadway
Kansas City, MO 64111
816-753-4404

Moore, Jack D U
4320 Wornall Rd
Kansas City, MO 64111
816-753-2033

Moore, Joan Prouty FP
8600 Ward Parkway
Kansas City, MO 64114
816-363-0600

Moore, John M IM
Suite 238-6400 Prospect
Kansas City, MO 64132
816-363-4114

Morantz, Robert A N
Research Med Off Tower T411
6420 Prospect
Kansas City, MO 64132
816-363-2500

Morgan, David B D
6513 Jefferson
Kansas City, MO 64113

Morgan, Richard L AN
St. Joseph Hosp
1000 Carondelet
Kansas City, MO 64114
816-943-2251

Morris, Barbara A PD
Suite 138 6400 Prospect
Kansas City, MO 64132
816-444-1139

Morris, J H IM
4240 Blue Ridge Blvd
Kansas City, MO 64133
816-356-8877

Morris, Terry V OBG
1515 W. Truman Rd.
Independence, MO 64050
816-836-4200

Morrison, Donald H AN
2525 Glen Hendren Dr.
Liberty, MO 64068
816-781-7200

Morrison, Richard A TR
10500 Mastin
Shawnee Mission, KS 66212
816-492-4700

Morrison, Robert R AN
8900 Ward Parkway
Kansas City, MO 64114
816-363-5652

Mosbacher, Hugh E PS
17221 E. 23rd St.
Independence, MO 64057
816-373-1515

Moss, Paul IM
8701 Walmer Dr.
Shawnee Mission, KS 66212

Muelleman, Peter J D
17221 E. 234rd St. Suite 107
Independence, MO 64057
816-478-1830

Mueller, Martin J IM
11723 Central
Kansas City, MO 64114

Mukharji, Jhulan CD
930 Carondelet Dr. Suite 201
Kansas City, MO 64114
816-943-3955

Muller, Milton PS
1515 W. Truman Rd. #604
Independence, MO 64050
816-461-0155

Mundy, William L IM
5905 Slater
Merriam, KS 66202

Munger, Michael L FP
Hickman Mills Clinic
11201 Colorado
Kansas City, MO 64137
816-763-5200

Munyan, Earl A IM
2430 R.D. Mize Rd. Suite 100
Independence, MO 64057
816-373-1122

Murphy, Everett M PUD
545 Penn Park
2929 Baltimore
Kansas City, MO 64108
816-561-6277

Murphy, John P PDS
Suite 509 4400 Broadway
Kansas City, MO 64111
816-931-5538

Mutchnick, Norman GS
6724 Troost
Suite 910
Kansas City, MO 64131
816-333-2000

Myers, John S FP
425 Huntington Rd
Kansas City, MO 64113

Myers, Carl M FP
Platte Medical Clinic
P. O. Box 980
Platte City, MO 64079
816-464-2313

Myers, Geo H U
1010 Carondelet Dr #210
Kansas City, MO 64114
816-942-4243

Myron, Mark C ONC
Suite 700 6724 Troost
Kansas City, MO 64131
816-333-1326

Naime, Mansour J PD
136 Rockhill Med Bldg
6700 Troost
Kansas City, MO 64131
816-363-3337

Namnum, Peter A PUD
8919 Parallel Pkwy Suite 206
Kansas City, KS 66112
816-788-7099

Navato, Jose R P
3445 Highway 291 Suite 200
Independence, MO 64057
816-795-1968

Neighbor, Ernest H ORS
2929 Baltimore Suite 500
Kansas City, MO 64108
816-561-3003

Neihart, Robert E IM
4620 JC Nichols Parkway #415
Kansas City, MO 64112
816-531-1550

Nelson, Bentley A OTO
11208 Granada Lane
Leawood, KS 66211

Nelson, Paul W GS
4320 Wornall Suite 308
Kansas City, MO 64111
816-753-7460

Nelson, Richard E AN
Dept Of Anesthesia St. Lukes
4400 Wornall Rd.
Kansas City, MO 64111
816-932-3652

Nesselrode, John H GS
1515 W Truman Rd
Ste 402
Independence, MO 64050
816-254-9292

Newman, Robert L OBG
4909 Wyandotte
Kansas City, MO 64112

Nicholis, G. Ronald PD
2000 N. E. Vivion Road
Kansas City, MO 64118
816-452-6620

Nickell, Margaret B OBG
4320 Wornall Rd. Suite 520
Kansas City, MO 64111
816-531-9400

Nigro, Thomas L GS
930 Carondelet Dr. Suite 101
Kansas City, MO 64114
816-943-3977

Noback, Richardson K IM
628 W. 67th St.
Kansas City, MO 64113

Noltensmeyer, Milton H AN
3305 W 50th Terr
Shawnee Mission, KS 66205

Nulton, Carnie C IM
Suite T101 6420 Prospect
Kansas City, MO 64132
816-363-4100

O'Farrell, Thos P GS
Suite T505
6420 Prospect
Kansas City, MO 64132
816-361-3988

O'Hearne, John J P
4706 Broadway Suite #103
Kansas City, MO 64112
816-531-7020

O'Keefe, James H IM
4320 Wornall Rd.
Medical Plaza II-20
Kansas City, MO 64111
816-931-1883

O'Kell, Richard T PTH
St Lukes Hosp Dept Path
44th & Wornall Rd
Kansas City, MO 64111
816-932-2425

O'Malley, James F U
2117 W. 120th St.
Leawood, KS 66209
816-333-9939

O'Neil, James H GS
275 Tait Terrace S.E.
Port Charlotte, FL 33952

Oleson, Gale B D
100 NW Mock Ave. #201
Blue Springs, MO 64015
816-228-9099

Olson, Lloyd C PD
24th And Gillham Rd
Childrens Mercy Hosp
Kansas City, MO 64108
816-234-3370

Opper, Susan E AN
St. Luke's Hospital
44th & Wornall Rd.
Kansas City, MO 64111
816-932-2033

Oppermann, Karen J PD
9150 E. 41st Terrace
Independence, MO 64057
816-356-5000

Osgood, Brian M IM
4240 Blue Ridge Blvd. #500
Kansas City, MO 64133
816-356-8877

Ost, Mark D PTH
6601 Rockhill Rd.
Kansas City, MO 64131
816-276-7144

Ostergaard, Daniel J FP
8880 Ward Parkway
Kansas City, MO 64114
816-333-9700

Overesch, Harry B ORS
6400 Prospect Ave Suite 200
Kansas City, MO 64132
816-363-2202

Owens, James L OBG
302 Broadway Med. Bldg
4400 Broadway
Kansas City, MO 64111
816-753-2223

---

*Doctor of osteopathy.

Owens, Robt H U
6675 Holmes Suite 420
Kansas City, MO 64131
816-333-9939

Ozar, Milton B U
Rockhill Med. Plaza N.
6650 Troost Suite 206
Kansas City, MO 64131
816-333-5433

Padula, Richard T TS
Suite T211 Research Med. Off
6420 Prospect Ave.
Kansas City, MO 64132
816-523-8120

Pakula, Sidney F PD
4545 Wornall Road Apt 311
Kansas City, MO 64111

Palazola, Joseph M IM
1500 NE Parvin Road
Kansas City, MO 64116
816-452-4000

Panek, Judy L IM
9807 Eastern
Kansas City, MO 64134

Paone, Douglas B IM
6420 Prospect
Suite T101
Kansas City, MO 64132
816-363-4100

Paradelo, Jorge C TR
6400 Prospect Suite 240
Kansas City, MO 64132
816-363-2677

Parelman, Allen G OPH
303 Highlands Prof Tower
6724 Troost Ave.
Kansas City, MO 64131
816-523-9066

Parelman, Joseph J OPH
Mid-America Eye Center Inc
6724 Troost Ste 303
Kansas City, MO 64131
816-523-9066

Parker, Craig A AN
Anesthesia Associates KC
6400 Prospect-Suite 138
Kansas City, MO 64132
816-444-1139

Parker, Joseph C PTH
Dept of Pth 2301 Holmes
Kansas City, MO 64108
816-556-3212

Parker, Kim E AN
Anesthesia Associates of KC
6400 Prospect-Suite 138
Kansas City, MO 64132
816-444-1139

Parkins, George K ORS
500 Penn Park
2929 Baltimore
Kansas City, MO 64108
816-561-3003

Pattison, Charles P GE
Suite 550
2929 Baltimore
Kansas City, MO 64108
816-371-7221

Pavlovich, Andrew S OTO
4240 Blue Ridge Blvd #434
Kansas City, MO 64133
816-358-7177

Pawsat, John E ORS
432 Medical Plaza
4320 Wornall Rd.
Kansas City, MO 64111
816-931-2105

Pecoraro, Anthony P PD
4400 Broadway
Kansas City, MO 64111
816-561-8100

Peete, Don C CD
9012 W. 102nd St.
Shawnee Mission, KS 66212

Pendell, Paul W GS
501 Bowen Dr.
Raymore, MO 64083

Pendergrass, Kelly B ON
6420 Prospect
Suite T101
Kansas City, MO 64132
816-363-4100

Perll, Maurice F ORS
830 W. 61st Terr.
Kansas City, MO 64113

Perll, Rita D CHP
Child Psy Childrens Hospital
24th & Gillham Rd.
Kansas City, MO 64108
816-234-3211

Perryman, John C IM
4400 Broadway
Suite 316
Kansas City, MO 64111
816-756-2520

Petersen, Eugene G R
Suite 128 4320 Wornall Rd.
Kansas City, MO 64111
816-561-5858

Peterson, Walter R GS
3934 Benton Blvd.
Kansas City, MO 64130

Peterson, Carl M GS
6400 Prospect Suite 232
Kansas City, MO 64132
816-361-9200

Peterson, Jay T HEM
4320 Wornall Rd
Suite 212
Kansas City, MO 64111
816-531-0930

Peterson, John E IM
930 Carondelet Dr. #201
Kansas City, MO 64114
816-943-3955

Pfeffer-Hurwitz, Judith CHP
Suite 202 4400 Broadway
Kansas City, MO 64111
816-561-2025

Pfuetze, Karl D IM
10550 Quivira Rd. Suite 510
Overland Park, MO 66215
913-492-6200

Philgreen, Donald E FP
The Light House
1409 E. Meyer Blvd.
Kansas City, MO 64131
816-361-2233

Phillips, Thomas P ORS
610 Medical Plaza
4320 Wornall Rd.
Kansas City, MO 64111
816-531-5757

Pickard, Nicholas S ORS
6210 High Dr
Shawnee Mission, KS 66208

Pickering, Lee I IM
1515 W Truman Rd. Suite 301
Independence, MO 64050
816-836-8130

Piebenga, Larry W OPH
4400 Broadway
Kansas City, MO 64111
816-561-1136

Piehler, Jeffrey M TS
4320 Wornall Road, Ste 50-II
Kansas City, MO 64111
816-931-7743

Pinkerton, Joe A TS
308 Medical Plaza
4320 Wornall Rd.
Kansas City, MO 64111
816-753-7460

Piper, Donald K ORS
9929 High Dr.
Leawood, KS 66206

Place, Kenneth C OPH
130 Penn Park
2928 Main
Kansas City, MO 64108
816-756-1236

Plapp, Frederick V PTH
St. Lukes/Laboratory Med.
44th at Wornall Rd.
Kansas City, MO 64111
314-932-3740

Pogson, George W IM
1515 W. Truman Rd. Suite 602
Independence, MO 64050
314-461-6837

Politi, Gregory B AN
3030 Baltimore
Kansas City, MO 64108

Pompushko, Rosalie P
4706 Broadway Suite 10S
Kansas City, MO 64112
816-531-3686

Poonawala, Huseni E CHP
11201 Colorado
Kansas City, MO 64137
816-763-1700

Porter, Charles B IM
Suite 40 II - 4320 Wornall
Kansas City, MO 64111
816-531-5510

Porter, Michael J AN
Suite 340 1000 E. 50th St.
Kansas City, MO 64110
816-333-7484

Porter, Susan S AN
8900 Ward Parkway
Kansas City, MO 64114
816-363-5652

Porter, Walter N FP
12745 W. 76th St.
Lenexa, KS 66216
913-921-6000

Postma, George S IM
8901 W. 74th St. #333
Shawnee Mission, KS 66204
914-262-9311

Potts, Donald A FP
Truman Medical Center East
7900 Lee's Summit Rd.
Kansas City, MO 64139
816-373-4415

Powell, Alan E PD
17221 E. 23rd St. Suite 210
Independence, MO 64057
816-373-4001

Powers, Catherine A AN
Suite 138 6400 Prospect
Kansas City, MO 64132
816-444-1139

Price, Patrick K OPH
218 W. R.D. Mize Rd.
Blue Springs, MO 64015
816-228-2800

Price, Richard B OTO
1000 E. 50th St. #230
Kansas City, MO 64110
816-822-8883

Printz, Jos H GS
820 W. 64th Terrace
Kansas City, MO 64113

Pro, John D P
6400 Prospect Suite 100
Kansas City, MO 64132
816-523-0103

Prochaska, Mark L P
7301 Mission Rd. Suite 230
Prairie Village, KS 66208
913-362-0058

Prostic, Edward J ORS
6724 Troost Suite 800
Kansas City, MO 64131
816-333-1700

Pryor, Harold J PM
EMG Laboratory
6420 Prospect Ste T503
Kansas City, MO 64132
816-361-8684

Psaltis, Phillip E IM
9713 N. Virginia
Kansas City, MO 64155

Pugh, Richard G PD
211 W. Locust Dr.
Blue Springs, MO 64014

Quer, Erich A GS
1802 Regency House
221 W. 48th St.
Kansas City, MO 64112
816-756-0021

Quiason, Arturo G P
Suite 206
17221 E. 23rd St.
Independence, MO 64057
816-373-1911

Quiason, Emmeline P CHP
Suite 206
17221 E. 23rd St.
Independence, MO 64057
816-373-1911

Quick, Annette M IM
15121 Dearborn
Overland Park, KS 66223
816-753-4030

Quick, William W END
P.O. Box 22632
Kansas City, MO 64113
816-276-7300

Racela, Antonio S PTH
Humana Hospital
10500 Quivira
Shawnee Mission, KS 66215
913-541-5584

Rader, Ada E GP
13414 Locust St
Kansas City, MO 64145

Raich, Robt A IM
4320 Wornall Rd Rm 440
Kansas City, MO 64111
816-753-3243

Ramey, Ehret O OBG
8108 Ward Parkway Plaza
Kansas City, MO 64114

Ramos, Americo G TS
2700 W. 69th
Mission Hills, KS 66208

Ratnam, Dasari V P
4900 Swope Pkwy.
Kansas City, MO 64130
816-923-5800

Raybould, Michael W IM
Suite 415 2929 Baltimore
Kansas City, MO 64108
816-756-0695

Rector, Joe L TR
3915 W. 53rd St.
Shawnee Mission, KS 66205

Reddy, Sarvotham K GS
6225 Raytown Trwy 81 2607
Kansas City, MO 64133
816-353-7744

Reed, Wm A TS
Medical Plaza II 50
4320 Wornall Rd.
Kansas City, MO 64111
816-931-7743

---

*Doctor of osteopathy.

Reinhardt, John R TS
2929 Baltimore
Kansas City, MO 64108
816-531-0118

Reiss, Jeanne E N
Ste 400 Highlands Prof Tower
6724 Troost
Kansas City, MO 64131
816-444-4082

Reister, Dorothy D PD
Suite T205 6420 Prospect
Kansas City, MO 64132
816-363-1304

Reister, Philip D GS
Suite 705
6724 Troost
Kansas City, MO 64131
816-523-2119

Rengachary, Dhanalakshmi OBG
4900 Swope Pkwy
Kansas City, MO 64130
816-923-5800

Rengachary, Setti S NS
Suite 390 2900 Baltimore
Kansas City, MO 64108
816-931-4995

Renner, John H FP
3521 Broadway
Kansas City, MO 64111
816-753-8850

Rhoades, Charles E ORS
Suite 610 4320 Wornall Rd.
Kansas City, MO 64111
816-531-5757

Rhoads, Jack V IM
900 Main St.
Grandview, MO 64030
816-761-5588

Ricci, Walter F P
6724 Troost
Kansas City, MO 64131
816-361-0899

Richards, Dean D IM
Health & Rehab Pavilion
6675 Holmes
Kansas City, MO 64131
816-276-7123

Richardson, Lloyd D PTH
Dept Of Pathology
2316 E. Meyer Blvd
Kansas City, MO 64132
816-276-4071

Richardson, Marion W OBG
2526 Prospect
Kansas City, MO 64127
816-923-9600

Richert, Robert C PTH
504 W 96th St
Kansas City, MO 64114

Rigdon, John F AN
6601 Rockhill Rd.
Box 11316
Kansas City, MO 64112
816-276-7901

Rigolosi, Ronald A IM
373 W 101st Terrace
Kansas City, MO 64114
816-942-8200

Riley, Joseph P R
Star Route 1, Box 26
Parthenon, AR 72666

Riller, Lowell E ORS
1267 W 61
Kansas City, MO 64113

Rippey, John H PTH
St. Luke's Hospital Lab.
44th And Wornall Rd.
Kansas City, MO 64111
816-932-2411

Ritter, William S CD
930 Carondelet Dr. Ste 201
Kansas City, MO 64114
816-753-0155

Robb, Christine A FP
13010 White Ave. Suite A
Grandview, MO 64030
816-765-1080

Roberts, Grosvenor G OM
S-1 Route 1
Lake Latawana, MO 64063

Roberts, Charles C PD
Childrens Mercy Hospital
24th & Gillham Rd.
Kansas City, MO 64108
816-234-3016

Roberts, Fred F PDR
Dept Of Rad St. Joseph Hosp
1010 Carondelet Drive
Kansas City, MO 64114
816-942-6900

Robinett, Wade V OTO
6700 Troost
604 Rockhill Med. Bldg.
Kansas City, MO 64131
816-444-9408

Robinson, Ernest K GS
1015 W 58th Terr
Kansas City, MO 64113

Robinson, Wm J P
9931 Lee Circle
Shawee Mission, KS 66206

Robinson, Arthur W IM
4320 Wornall Rd
Kansas City, MO 64111
816-531-0552

Robinson, William A EM
2301 Holmes St.
Truman Medical Center
Kansas City, MO 64108
816-556-3127

Rodgers, George H U
Suite T417 6420 Prospect
Kansas City, MO 64132
816-333-2880

Rodgers, Saml U OBG
Wayne Miner Hlth. Ctr.
825 Euclid
Kansas City, MO 64124
816-474-4920

Rofail, Amin A AN
9206 England
Shawnee Mission, KS 66212

Rogers, Robt L OTO
T401 6420 Prospect
Kansas City, MO 64132
816-361-5858

Roh, Lynn H OTO
4801 Cliff Ave. Suite 204
Independence, MO 64055
816-478-3555

Roloson, Gary J PTH
Arkansas Childrens Pth Dept
800 Marshall
Little Rock, AR 72202

Romig, Laurie A EM
9209 Seminole Blvd #49
Seminole, FL 34642

Rope, Douglas M IM
373 W. 101st Terr.
Kansas City, MO 64114
816-942-8200

Rosen, Howard M IM
2940 Baltimore Suite 400
Kansas City, MO 64108
816-561-7800

Rosen, Larry A IM
Suite 500
4240 Blue Ridge Blvd.
Kansas City, MO 64133
816-356-8877

Ross, Robert M IM
751 E. 63rd St. Suite 308
Kansas City, MO 64110
816-333-6640

Roth, Alfred D AN
6644 Outlook Dr.
Mission, KS 66202
913-722-3095

Rowe, Vernon D N
4320 Wornall Rd. Suite 452
Kansas City, MO 64111
816-753-8800

Rozen, Jay I R
6400 Prospect
Suite 310
Kansas City, MO 64132
816-523-2400

Rubnitz, Leon H AN
210 W. 94th St.
Kansas City, MO 64114

Rues, Lawrence A FP
Goppert Family Care Center
6601 Rockhill Rd
Kansas City, MO 64131
816-276-7600

Russell, Robt K FP
8933 Rose Lane
Kansas City, MO 64133

Russell, James L TS
330 Penn Park Bldg
2929 Baltimore
Kansas City, MO 64108
816-531-0118

Rutherford, Barry D CD
Medical Plaza II #20
4320 Wornall Rd.
Kansas City, MO 64111
816-931-1883

Ryser, Carol A PD
Matrix
7447 Holmes
Kansas City, MO 64131
816-363-3313

Sabates, Felix N OPH
300 Rockhill Medical Plaza N
6650 Troost Ave.
Kansas City, MO 64131
816-333-7376

Sabates, Roland OPH
300 Rockhill Medical Plaza N
6650 Troost Ave.
Kansas City, MO 64131
816-333-7376

Saferstein, A L AN
8308 Somerset
Shawnee Mission, KS 66207

Safley, Thos J GS
17221 E 23rd St
Independence, MO 64057
816-373-4646

Saldana, Dahlia IM
9205 E. 40th Highway
Independence, MO 64055
816-737-3399

Salvaggio, Bruce H IM
Medical Plaza Building
4320 Wornall Suite 312
Kansas City, MO 64111
816-931-6220

Sand, John J N
Suite 316 6400 Prospect
Kansas City, MO 64132
816-363-2559

Sanders, Wm F IM
1104 W. 66th Terrace
Kansas City, MO 64113

Sanders, Donald C P
6400 Prospect Suite 312
Kansas City, MO 64132
816-363-5554

Sandow, Theodore L ORS
4320 Wornall Rd
Kansas City, MO 64111
816-753-5102

Santoro, Carlos G GS
1103 Westport Rd
Kansas City, MO 64111
816-753-1568

Satake, Robert L N
6700 Troost Suite 436
Kansas City, MO 64131
816-361-5588

Satterlee, C. Craig ORS
500 Penn Plaza Med
2929 Baltimore
Kansas City, MO 64108
816-561-3003

Sauer, Gordon C D
6400 Prospect Suite 338
Kansas City, MO 64132
816-444-5601

Scales, Margaret B PTH
Department of Pathology
2301 Holmes
Kansas City, MO 64108
816-556-3780

Scanlon, Charlotte D IM
Suite 201 6650 Troost
Kansas City, MO 64131
816-363-7710

Scarborough, Betty F EM
11274 Hemlock
Shawnee Mission, KS 66210
816-587-2308

Scarborough, Mark R EM
Emergency Dept.
1000 Carondelet Dr.
Kansas City, MO 64114
816-943-2710

Scharf, Daniel CD
4949 Rockhill Rd
Menorah Medical Ctr
Kansas City, MO 64110
816-276-8260

Scherer, Stephen IM
Kansas City Internal Med.
Ste T101 6420 Prospect
Kansas City, MO 64132
816-363-4100

Schiffmacher, Jack E R
4517 W 65th St
Prairie Village, KS 66208

Schillie, Gene A OBG
T301 Research Med. Bldg.
6420 Prospect
Kansas City, MO 64132
816-444-6888

Schlozman, Danl L PUD
Suite T 303
6420 Prospect
Kansas City, MO 64132
816-333-1919

Schmidt, Thomas L ORS
The Children's Mercy Hosp.
24th At Gillham Rd.
Kansas City, MO 64108
816-234-3693

Schoolman, Arnold NS
Suite 310 1000 E. 50th St.
Kansas City, MO 64110
816-333-8944

Schottman, Gerhard W R
710 Medical Plaza
4320 Wornall Rd.
Kansas City, MO 64111
816-531-9481

Schroeder, C. Eric IM
2929 Baltimore S-545
Kansas City, MO 64108
816-561-6277

---

*Doctor of osteopathy.

Schroeder, Cygnet A PM
4320 Wornall Rd. #400
Kansas City, MO 64111
816-931-3013

Schutz, Richard B OBG
P.O.Box 2843
Liberal, KS 67905

Schwartz, Howard I OBG
6420 Prospect Suite T107
Kansas City, MO 64132

Schwegler, Robert G DR
Suite 128 4320 Wornall Rd.
Kansas City, MO 64111
816-561-5858

Seely, Clark W PD
3000 W 68th St
Shawnee Mission, KS 66208

Seiden, Gerald D OTO
6724 Troost
Suite 208
Kansas City, MO 64131
816-361-6013

Seitz, Elson F PTH
1509 W Truman Rd Clinic
Independence, MO 64050
816-836-8100

Seligson, Frederic L TS
Thoracic & Vascular Surg PC
4949 Rockhill Ste 2203
Kansas City, MO 64110
816-276-8250

Sells, Kenneth J FP
2900 Baltimore Ste 400
Kansas City, MO 64108
816-751-5000

Seshumurty, Ponnuru PD
Prime Health
5799 Broadmoor
Mission, KS 66202
816-722-5030

Seshumurty, Vimala PD
373 W. 101st Terrace
Kansas City, MO 64114
314-942-8200

Shaffer, Stanley G PD
Childrens's Mercy Hospital
24th & Gillham Rd.
Kansas City, MO 64108
816-234-3591

Shalet, Malcolm F IM
6675 Holmes Suite 440
Kansas City, MO 64131
816-363-5662

Sharma, Janardana N NEP
208 Medical Plaza
4320 Wornall Rd
Kansas City, MO 64111
816-531-0552

Sharma, Vidya PD
Children's Mercy Hosp
24th & Gillham Rd
Kansas City, MO 64108
816-234-3684

Sharp, Ronald J PDS
Suite 509 4400 Broadway
Kansas City, MO 64111
816-931-5538

Sheahon, John A OBG
6700 Raytown Rd
Raytown, MO 64133
816-358-5300

Shechter, Nathan ORS
800 Highlands Prof Tower
6724 Troost
Kansas City, MO 64131
816-333-1700

Sheehan, Michael B PD
24th & Gillham Rd.
Kansas City, MO 64108
816-234-3591

Shelden, Russell D AN
816 West 58th Terrace
Kansas City, MO 64113

Shelley, William C AN
Suite 138 - 6400 Prospect
Kansas City, MO 64132
816-444-1139

Sherman, Neal J IM
5530 Colllege Blvd. #240
Overland Park, KS 66211
816-451-8989

Sheverini, James A TS
Medical Plaza II 50
4320 Wornall Rd
Kansas City, MO 64111
816-931-7743

Shifrin, Alexander CD
6700 Troost Ave
Kansas City, MO 64131
816-444-2100

Shimshak, Thomas M CD
4320 Wornall Rd. Suite 20-II
Kansas City, MO 64111
816-931-1883

Shockley, Clarence J OBG
418 Winnebago Dr.
Greenwood, MO 64034

Shuey, Herbert H GP
5339 W. 96th St.
Shawnee Mission, KS 66207

Shuler, Frederick N GE
6650 Troost #108
Kansas City, MO 64131
816-444-7050

Siegel, Carl D PTH
11116 Glen Arbor Terrace
Kansas City, MO 64114

Silvers, L. Michael FP
7900 Lee's Summit Rd.
Truman Med Ctr East
Kansas City, MO 64139
816-373-4415

Simmons, John L U
1903 Bay Road #306
Vero Beach, FL 32963

Simmons, Donald D P
2900 Baltimore
Suite 380
Kansas City, MO 64108
816-753-1468

Simon, Sanford GS
6724 Troost Ste 410
Kansas City, MO 64131
816-333-9500

Singh, Linda C IM
6950 Squibb
Shawnee Mission, KS 66202
913-384-2325

Singleton, John M IM
Suite 310 4400 Broadway
Kansas City, MO 64111
816-531-0288

Sinnett, Mark F IM
Little Blue & Lee Summit Rd.
Truman Medical Center E
Kansas City, MO 64139
816-373-4415

Sirridge, Marjorie J HEM
2411 Holmes
Kansas City, MO 64108
816-276-1855

Skillman, Robt K HEM
4320 Wornall Rd
Kansas City, MO 64111
816-753-4312

Skinner, John T GP
1238 W. 65th St.
Kansas City, MO 64113

Slankard, J E OBG
4320 Wornall Rd.
Kansas City, MO 64111
816-753-6010

Slentz, Wm A IM
9835 Pembroke Lane
Shawnee Mission, KS 66206

Slentz, Edwin L IM
4812 West 66th Terrace
Shawnee Mission, KS 66208

Sly, Anne K IM
2900 Baltimore Suite 550
Kansas City, MO 64108
816-756-2673

Smith, Arthur B R
8409 Wenonga Rd
Shawnee Mission, KS 66206

Smith, Wallace B OPH
337 Partridge
Independence, MO 64055

Smith, C. Byron OPH
4177 Broadway
Kansas City, MO 64111
816-753-5599

Smith, David Lambuth ID
2316 E Meyer Blvd.
Kansas City, MO 64132
816-276-3979

Smith, Elbert E PD
206 Broadway Med. Bldg.
4400 Broadway
Kansas City, MO 64111
816-561-8100

Smith, Hubert E IM
Suite 338 6400 Prospect
Kansas City, MO 64132
816-444-4958

Smith, Katherine W PD
Children's Mercy Hospital
24th And Gillham Rd.
Kansas City, MO 64108
816-234-3054

Smith, O. Dale PTH
Suite 300 4400 College Blvd.
Overland Park, KS 66211
913-339-4400

Smith, Reid C IM
1515 W. Truman Rd. Ste. 504
Independence, MO 64050
816-252-9002

Smith, Timothy W IM
1010 Carondelet Suite 421
Kansas City, MO 64114
816-941-7600

Snavely, Sharon R IM
6724 Troost Suite 710
Kansas City, MO 64131
816-333-6000

Sneid, David S END
Suite 550
2900 Baltimore
Kansas City, MO 64108
816-756-1234

Soeldner, James O FP
6921 E. 143rd Ct.
Grandview, MO 64030
816-765-6784

Spake, R. Vanneman OTO
4320 Wornall Road Suite 422
Kansas City, MO 64111
816-931-3296

Spalding, Wilber B OPH
2928 Main St
Kansas City, MO 64108
816-756-1236

Spaulding, Kenneth A GS
3800 Locust St.
Kansas City, MO 64109
816-861-2300

Speckman, Jerry M DR
6400 Prospect Suite 310
Kansas City, MO 64132
816-523-2400

Spencer, Donald M ORS
4240 Blue Ridge Blvd
Kansas City, MO 64133
816-356-3100

Spies, Barbara J GP
P. O. Box 10
Louisburg, KS 66053

Spradlin, Larry D OBG
1010 Carondelet Dr Ste 328
Kansas City, MO 64114
816-941-0700

Spurney, Joe E FP
11201 Colorado
Kansas City, MO 64137
816-763-5200

Spurny, Otto M CD
6675 Holmes Suite 440
Kansas City, MO 64131
816-363-5662

Staab, Gerald E R
6650 Troost Suite 210
Kansas City, MO 64131
816-363-5606

Stacey, Wallace R OBG
3407 Shady Bend Drive
Independence, MO 64052
816-478-0220

Stahl, Lloyd D IM
4949 Rockhill Rd.
Kansas City, MO 64110
816-276-8260

Stanford, Carol A IM
373 W. 101st Terrace
Kansas City, MO 64114
816-942-8200

Stanley, Charles G OM
1820 W. 38th St.
Kansas City, MO 64111

Stanley, John H CHP
4520 Madison
Kansas City, MO 64111
816-531-2900

Stanton, Danny K IM
Kaiser Permanente
87th & Hillcrest
Kansas City, MO 64138

Starks, Gregory C OBG
6402 Prospect
Suite T107
Kansas City, MO 64132
816-361-3640

Statland, Morris CD
400 A. W. 11th St.
Kansas City, MO 64105

Statland, Harry IM
400A W 11th St.
Kansas City, MO 64105
816-221-5140

Steffen, Lawrence F CD
9606 Nieman Place
Shawnee Mission, KS 66214

***Steinbrecher, Janis M** IM
506 N.W. Murray Rd.
Lee's Summit, MO 64081
816-525-4400

Steinhaus, David M CD
Suite II-20 4320 Wornall
Kansas City, MO 64111
816-931-1883

Stelmach, Walter J FP
6601 Rockhill Rd.
Kansas City, MO 64131
816-276-7600

---

*Doctor of osteopathy.

Stephens, Jack D AN
2400 RD Mize Road
Independence, MO 64057
816-373-0263

Stephenson, Robert E DR
8900 Indian Creek Pkwy #450
Overland Park, KS 66210
913-469-8883

Stern, Thomas L FP
P. O. Box 8418
Kansas City, MO 64114

Stewart, Harry A P
4706 Broadway Ste 105
Kansas City, MO 64112
816-531-3686

Stewart, Ronald M OBG
4320 Wornall Suite 520
Kansas City, MO 64111
816-531-9400

Stiaszny, Louis K PD
9150 E. 41st. Terrace
Kansas City, MO 64133
816-356-5000

***Stillie, G. Donald** ONC
P. O. Box 22608
Kansas City, MO 64113
816-753-4600

Stitt, Ronald W ORS
373 W. 101st Terrace
Kansas City, MO 64114
816-942-8200

Stockton, Raymond W U
5215 W. 81st St.
Shawnee Mission, KS 66208

Stone, Mary K OBG
1900 Copper Oaks Cir
Blue Springs, MO 64015
816-228-9331

Stout, Carl N OPH
Suite 100 4801 Cliff Ave.
Independence, MO 64055
816-478-1230

Stratemeier, Edward H R
1705 Weatherton
Blue Springs, MO 64015

Strauss, Carl F IM
Suite 201 6650 Troost
Kansas City, MO 64131
816-363-7710

Stribling, Thos L OBG
17500 Med Ctr Parkway Ste 3
Independence, MO 64057
816-478-0220

Stromberg, Eric D AN
Anesthesia Associates of KC
6400 Prospect-Suite 138
Kansas City, MO 64132
816-444-1139

Stuckmeyer, James A ORS
205 West R.D. Mize Rd.
Blue Springs, MO 64014
816-229-6800

Suarez, Alberto FP
615 W. 3rd St.
Lee's Summit, MO 64063
816-524-3799

Sublette, Glen L N
6724 Troost Suite 400
Kansas City, MO 64131
816-444-4082

Suddarth, Sterling B PD
c/o Harvey Mimms
6214 Valley Rd.
Kansas City, MO 64113

Sulit, Arnulfo P IM
2900 Baltimore Bldg Ste
Kansas City, MO 64108
816-753-8713

Sullivan, Bradley H OBG
Suite T 301 6420 Prospect
Kansas City, MO 64132
816-444-6888

Sullivan, Christine EM
Humana Hosp-Overland Park
10500 Quivira Rd.
Overland Park, KS 66215
816-363-1993

Suseela, Dasari PD
4900 Swope Pkwy
Kansas City, MO 64130
816-923-5800

Sutton, Richard L D
3203 W 83rd Terrace
Shawnee Mission, KS 66206

Swaim, Truett ORS
205 W R.D. Mize Rd. Ste 402
Blue Springs, MO 64014
816-229-6800

Swanson, Howard J RHU
Suite T101 Research Med Off.
6420 Prospect
Kansas City, MO 64132
816-363-4100

Sweeney, Michael J CD
1010 Carondelet Dr. Ste 401
Kansas City, MO 64114
816-942-5552

Szabados, Ernest D ORS
17221 E. 23rd St. Suite 208
Independence, MO 64050
816-373-2211

Szeto, J. Simon IM
720 Oak St. Suite 200
Kansas City, MO 64106
816-471-2892

Tackett, Russell E U
6400 Prospect Suite 120
Kansas City, MO 64132
816-361-0277

Takacs, Robert J ORS
6650 Troost Suite 103
Kansas City, MO 64131
816-444-4664

Talbott, Lawrence B PTH
4104 W. 110th St.
Shawnee Mission, KS 66211
816-276-7144

Tamblyn, Claire L AN
7912 Pawnee
Prairie Village, KS 66208

Taormina, Marc K GE
1515 W. Truman Rd. Suite 403
Independence, MO 64050
816-836-1616

Taylor, John R.W. OPH
443 West 68th
Kansas City, MO 64113
816-363-5350

Tenney, Jackie PD
4900 Swope Parkway
Kansas City, MO 64130
816-923-5800

Thalblum, Harvey DR
6400 Prospect Ste 310
Kansas City, MO 64132
816-523-2400

Thedinger, Bradley S OTO
3100 Broadway Suite 509
Kansas City, MO 64111
816-531-7373

Theel, Otto W FP
4301 Main St
Kansas City, MO 64111
816-931-3199

Thibeault, Donald W PD
Children's Mercy Hosp.
24th & Gillham Rd.
Kansas City, MO 64108
816-234-3592

Thomas, Alexis G NEP
1000 E. 50 #405
Kansas City, MO 64110
816-444-7300

Thomas, Christopher Y GS
5830 Mission Dr.
Shawnee Mission, KS 66208

Thomas, James J AN
Anesthesia Associates of KC
6400 Prospect #138
Kansas City, MO 64132
816-444-1139

***Thomas-Richards, Jose R** ORS
3101 Broadway #370
Kansas City, MO 64111
816-561-7251

Thompson, David E AN
2400 R. D. Mize Road #1
Independence, MO 64057
816-373-0263

Thompson, Scott W FP
2900 Baltimore Suite 400
Kansas City, MO 64108
816-751-5000

Thorp, James A OBG
4400 Wornall Rd.
Kansas City, MO 64111
816-932-3585

Throne, Ben J TR
6400 Prospect Suite 240
Kansas City, MO 64132
816-363-2677

Tice, Wayne K DR
3626 Blue Jacket Drive
Lee's Summit, MO 64063

Tillema, David A ORS
6650 Troost Suite 103
Kansas City, MO 64131
816-444-4664

Tiojanco, Milagros E AN
3030 Baltimore
Kansas City, MO 64108
816-753-4600

Titterington, Frank W IM
2316 Medical Plaza
4320 Wornall Rd
Kansas City, MO 64111
816-531-2020

Tomlinson, David L AN
6400 Prospect Suite 138
Kansas City, MO 64132
816-444-1139

Toubes, Daniel B IM
Suite 201 6650 Troost
Kansas City, MO 64131
816-363-7710

Towle, Daniel J AN
6400 Prospect Suite 138
Kansas City, MO 64132
816-444-1139

Trevor, Richard P R
6400 Prospect Suite 310
Kansas City, MO 64132
816-523-2400

Trimble, Geo X IM
3521 Broadway (CHIRI)
Kansas City, MO 64111
816-753-8850

Troeh, Melvin R IM
1515 W. Truman Rd.
Suite 301
Independence, MO 64050
816-836-8130

Trowbridge, Ellsworth P
18435 101st Dr
Sun City, AZ 85373

Trowbridge, Barnard C OPH
7926 Howe Dr.
Prairie Village, KS 66208

Tuohy, Gerald F AN
44th & Wornall Rd
Kansas City, MO 64111
816-932-2033

Turano, Wm L OBG
6700 Raytown Rd
Raytown, MO 64133
816-358-5300

Tutera, Dominic F OBG
1260 W. 63rd. Terr.
Kansas City, MO 64113

Tutera, Gino OBG
6675 Holmes #300
Kansas City, MO 64131
816-444-4479

Twyman, Richard A OS
7919 Bristol Ct
Shawnee Mission, KS 66208

Underwood, Dick H OPH
2009 W. 123 Terrace
Leawood, KS 66209

***Vale, Janett A** IM
Prime Health.
373 W. 101st Terrace
Kansas City, MO 64114
816-362-8200

Van Biber, James T PD
205 W. R. D. Mize Rd. #108
Blue Springs, MO 64014
816-229-6322

Van Buskirk, Wm C GS
6700 Troost Suite 308
Kansas City, MO 64131
816-361-1822

Van Way, Charles W TS
4400 Wornall
Kansas City, MO 64111
816-932-3577

Vaughn, James W P
10901 Winner Rd.
Independence, MO 64052
816-254-3652

Vaughters, Frank M PD
1000 E. 50th #320
Kansas City, MO 64110
816-523-0066

Vera, Enrique P
6724 Troost
#205
Kansas City, MO 64131
816-361-0899

Verdught, Ammon L IM
1515 West Truman #301
Independence, MO 64050
816-836-8130

Vergara, Gerardo G PTH
3030 Baltimore
Kansas City, MO 64108
816-753-4600

***Vialle, Gene M** AN
Anesthesia Associates of KC
6400 Prospect Suite 138
Kansas City, MO 64132
816-444-1139

Villanueva, Angela A PTH
St. Joseph Hosp.
1000 Carondelet Dr.
Kansas City, MO 64114
816-943-2643

Viril, Leonardo C GE
6675 Holmes Suite 320
Kansas City, MO 64131
816-444-6911

Vogel, Arthur P AN
Suite 138 6400 Prospect
Kansas City, MO 64132
816-444-1139

---

*Doctor of osteopathy.

***Vogelsang, Judith K** IM
Prime Health Stadium Med.
9150 E. 41st Terrace
Kansas City, MO 64123
816-356-5000

Voshall, David L IM
205 W. RD Mize Rd. Suite 308
Blue Springs, MO 64014
816-228-9841

Voth, Harold W IM
5413 Neosho
Shawnee Mission, KS 66205

Waddell, Thomas H DR
710 Medical Plaza
4320 Wornall Rd
Kansas City, MO 64111
816-531-9481

Wade, Kim C IM
6675 Holmes Suite 440
Kansas City, MO 64131
816-363-5662

Waeckerle, Joseph F EM
6601 Rockhill Rd.
Kansas City, MO 64131
816-361-4321

Wagner, Paul J AN
Smart Rd, Box 256
Greenwood, MO 64034

Waldorf, James C PS
Suite T115 6420 Prospect
Kansas City, MO 64132
816-333-5524

Walker, Orville C PD
1515 W Truman Rd
Independence, MO 64050
816-833-0990

Wall, Harry C A
2425 W. 67th St.
Shawnee Mission, KS 66208

Wall, Leonard A OBG
4320 Wornall Rd.
Suite 520
Kansas City, MO 64111
816-531-9400

Wallace, Darryl L OBG
Dept. Of Med. Ed.
44th And Wornall Rd
Kansas City, MO 64111
816-932-2026

Walton, Patrick J PS
4400 Broadway Ste 408
Kansas City, MO 64111
816-561-6633

Warady, Bradley A PD
Children's Mercy Hospital
24th & Gillham Rd.
Kansas City, MO 64108
816-234-3010

Waring, J. Michael AN
St. Joseph Health Center
1000 Carondelet Dr.
Kansas City, MO 64114
816-942-4400

***Wasserman, Gary S** PD
Childrens Mercy Hosp
24th & Gillham Rd
Kansas City, MO 64108
816-234-3053

Waters, Jeffrey A PD
206 Broadway Medical Bl
4400 Broadway
Kansas City, MO 64111
816-561-8100

Wathanacharoen, Suchint TS
Medical Plaza II 50
4320 Wornall Rd.
Kansas City, MO 64111
816-931-7743

Watts, Jane M FP
Goppert Family Care Ctr.
6601 Rockhill Road
Kansas City, MO 64131
816-276-7600

Waxman, Dan A PTH
4040 Main
Community Blood Center
Kansas City, MO 64111
816-753-4040

Waxman, Herbert J IM
Suite 201 6650 Troost
Kansas City, MO 64131
816-363-7710

Waxman, Jane Z PD
12516 W. 85th Terr.
Lenexa, KS 66215
913-684-6670

Waxman, Michael J PUD
6420 Prospect Suite T303
Kansas City, MO 64132
816-333-1919

Weaver, Michael L IM
4505 Headwood #1
Kansas City, MO 64111
816-932-2443

Weaver, Steven C AN
6601 Rockhill Road
Box 11316
Kansas City, MO 64112
816-276-7901

Webb, Harry E PS,
502 Broadway Med Bldg
4400 Broadway
Kansas City, MO 64111
816-753-0303

Weiford, Edward C NS
2009 W. 68th St.
Shawnee Mission, KS 66208

Weinstein, Chas L N
4440 Broadway
Kansas City, MO 64111
816-561-4655

Weir, Robt K OPH
610 Blue Ridge Tower
4240 Blue Ridge Blvd
Kansas City, MO 64133
816-358-3600

Weis, Ronald R DR
12329 Walmer
Overland Park, KS 66209
816-942-6900

Wells, James A AN
1008 Valentine Rd
Kansas City, MO 64111

Wells, Donald E NEP
1620 W. Park Terrace
Atlantic Beach, FL 32233

Wells, Stanley D DR
6400 Prospect Suite 310
Kansas City, MO 64132
816-523-2400

Welter, Eugene S OM
8511 Hillcrest Rd. Ste 320
Kansas City, MO 64138
816-361-7755

Weng, Lee T P
5121 Raytown Rd.
Raytown, MO 64133
816-356-5688

Wenner, Herbert A PD
9711 Johnson Drive
Shawnee Mission, KS 66203

Werth, Claude J P
6420 Prospect Suite T203
Kansas City, MO 64132
816-333-0405

West, Harold D ORS
1010 Carondelet Dr. Ste 412
Kansas City, MO 64114
816-254-4800

Wheeler, Chas B PH
4320 Wornall Rd
Kansas City, MO 64111
816-931-4141

Whitaker, James H ORS
6420 Prospect
Suite T207
Kansas City, MO 64132
816-444-9000

White, Chas H AN
6518 Overhill Rd
Shawnee Mission, KS 66208

White, Wm E NM
6015 State Line
Kansas City, MO 64113

White, James S U
6700 Troost
208 Rockhill Med. Bldg.
Kansas City, MO 64131
816-444-4780

White, Stoughton F U
6815 Cherokee Lane
Shawnee Mission, KS 66208

Whitman, Daniel S IM
UMKC School Of Medicine
2411 Holmes
Kansas City, MO 64108
816-276-1980

Whitmore, J. Stewart R
148 Riverboat Dr.
Washington, NC 27889

Whittaker, Chas K NS
4440 Broadway
Kansas City, MO 64111
816-561-4655

Wientzen, Arthur S IM
751 E. 63rd 3rd Floor
Kansas City, MO 64110
816-333-6640

Wilber, Robt D GE
4320 Wornall Rd Ste 208
Kansas City, MO 64111
816-531-0552

Wilcox, Dennis M DR
Suite 128 4320 Wornall Rd.
Kansas City, MO 64111
816-561-5858

Wilhelm, Warren F IM
6 Belle Vista Court
Lake Ozark, MO 65049

Wilkins, Michael S IM
550 Baltimore Med. Bldg.
2900 Baltimore
Kansas City, MO 64108
816-756-2673

Wilkinson, Charles B P
Gr KC Mental Hlth Found
2055 Holmes
Kansas City, MO 64108
816-221-5000

Wilkinson, Everett A GS
6810 Linden Lane
Prairie Village, KS 66208

Williams, Joseph C OBG
11 Coventry Ct.
Shawnee Mission, KS 66208

Williams, Kathleen M PD
373 W. 101st Terr.
Kansas City, MO 64114
816-942-8200

Williams, Paul A FP
Truman Med. Ctr. East
Lee's Summit, MO 64139
816-373-8210

Williams, Roland D OTO
1010 Carondelet Dr.
Suite 224
Kansas City, MO 64114
816-942-7200

Williams, Starks J PD
1734 E. 63rd St.
Suite 205
Kansas City, MO 64110
816-361-6699

Willie, Glen R NEP
2700 Hospital Dr. Suite 240
N Kansas City, MO 64116
816-474-9353

Willis, Cythia C OBG
200 N. E. Chipman Rd.
Lee's Summit, MO 64063
816-229-0572

Willoughby, Jean B IM
1019 W. 69th Terr.
Kansas City, MO 64113

Willoughby, James W A
P. O. Box 271
Liberty, MO 64068
816-781-0902

***Willsie-Ediger, Sandra K** IM
2411 Holmes
Kansas City, MO 64108
816-276-1933

Wilson, Vicki R IM
825 Euclid
Kansas City, MO 64124
816-331-5842

Wilson, Clifford C CRS
1129 Leisure Lane #8
Walnut Creek, CA 94595

Wilt, David A IM
6420 Prospect Suite T101
Kansas City, MO 64132
816-363-4100

Winer, Herbert J OBG
1000 E. 50th St, Suite 300
Kansas City, MO 64110
816-444-2505

Winer, Nathaniel IM
2411 Holmes
Truman Medical Cente
Kansas City, MO 64108
816-276-1902

Winkelman, Esther B GP
6700 the Paseo
Kansas City, MO 64132

Wise, Geo W PD
4610 Homestead
Shawnee Mission, KS 66208

Wise, Morris F U
6724 Troost Suite #608
Kansas City, MO 64131
816-333-7885

Wolf, Jack W IM
6125 Moringside Dr.
Kansas City, MO 64113

Wood, Barry C IM
4320 Wornall Rd. Suite 208
Kansas City, MO 64111
816-531-0552

Wood, David G DR
8900 Indian Creek Pkwy #450
Overland Park, KS 66210
913-469-8883

Woods, Walton C OM
9004 E. 73rd. St
Kansas City, MO 64133

Woods, Gerald M PD
12008 Jarboe St.
Kansas City, MO 64145
816-234-3297

Woodward, Wm W IM
21 Lakeside Drive
Holiday Island, AR 72632

Wortmann, Robt F OBG
2819 W 66th Terr
Shawnee Mission, KS 66208

---

*Doctor of osteopathy.

Wright, R P IM
2930 W. 49th St.
Shawnee Mission, KS 66205
Wright, Robert W AN
Penn View Anes
3030 Baltimore
Kansas City, MO 64108
816-753-4600
Wu, Wm Q NS
2900 Baltimore Suite 390
Kansas City, MO 64108
816-931-4995
Wurster, Jerry B OPH
4320 Wornall Rd
#714
Kansas City, MO 64111
816-561-2289
Wurster, Mark W IM
Suite 236 4320 Wornall Rd.
Kansas City, MO 64111
816-531-2020
Wurster, W J OTO
1010 Carondelet Dr.
Suite 224
Kansas City, MO 64114
816-942-7200
Yeast, John D OBG
4400 Wornall Rd.
Outpatient Ctr 2nd Fl.
Kansas City, MO 64111
816-932-3585
Yedlin, Jay H AN
1000 E. 50th St. #340
Kansas City, MO 64110
816-333-7484
Yost, John G ORS
6420 Prospect
Kansas City, MO 64132
816-444-9000
Youll, Donald V A
1010 Carondelet Dr.
Suite 220
Kansas City, MO 64114
816-941-9130
Youmans, Ronald A N
415 E 63rd St
Kansas City, MO 64110
816-333-2891
Young, James E P
9700 Overbrook Drive
Shawnee Mission, KS 66206
Youngblood, James P OBG
Truman Med Ctr Dept Of Obg
2301 Holmes
Kansas City, MO 64108
816-556-3033
Yu, Mario K N
6700 Troost Ave. Suite 436
Kansas City, MO 64131
816-361-5588
Zacharewicz, Lisa J IM
6601 Rockhill Rd.
Kansas City, MO 64131
816-361-3500
Zarr, James S PM
6675 Holmes Suite 410
Kansas City, MO 64131
816-276-7035
Zerr, Charles H IM
1100 West Truman Rd.
Independence, MO 64050
816-254-3555
Ziemianski, Matthew C OPH
Suite 300 6650 Troost
Kansas City, MO 64131
816-333-7376
Zinn, Marcia V AN
Truman Med. Ctr. Dept Surg.
2301 Holmes
Kansas City, MO 64108
816-556-3216
Zoller, David D PTH
Rt. 1, Box 280 B
Blue Springs, MO 64015
Zukaitis, Mark G AN
Anesthesia Associates of KC
6400 Prospect-Suite 138
Kansas City, MO 64132
816-444-1139
Zwerenz, Bruno H P
7900 Lee's Summit Rd.
Kansas City, MO 64139
816-373-4415

135 — MID-MISSOURI

Bartlett, Hugh C GS
P. O. Box 859
1100 W. 10th St.
Rolla, MO 65401
314-364-7610
Bass, James J GP
1201 Hauck Dr.
Rolla, MO 65401
314-364-8818
Bass, Barry J GS
1501 E. 10th St. Suite A
Rolla, MO 65401
314-364-7799
Baumann, Albert R GP
408 Main St.
Steelville, MO 65565
314-775-2119
Breeden, Richard L N
1100 W. 10th St. #280
Rolla, MO 65401
314-265-3287
Butts, James D GP
100 Adrian
Rolla, MO 65401
314-364-4356
Cook, Katherine S PD
11th & Bishop
Rolla, MO 65401
314-364-4870
Deardeuff, Dwight L IM
Rt 2
Rolla, MO 65401
314-341-5295
Drake, Avery A OPH
4357 N 106th Ave
Phoenix, AZ 85039
Draper, Bernard L OBG
P. O. Box 2374
Greeley, CO 80632
Dumonceaux, Leonard J P
1100 W. 10th St. Ste 165
Rolla, MO 65401
314-341-8080
Feind, Earl E GP
P. O. Box B
Rolla, MO 65401
314-364-4226
Fortin, Jorge A OBG
1100 W. 10th St.
Rolla, MO 65401
314-364-8100
Grow, Pamela K PD
Russell-Young Clinic
11th & Bishop
Rolla, MO 65401
314-364-1327
Huss, Randall D FP
910 W. 10th St.
Rolla, MO 65401
314-364-4226
Huster, Robert M OBG
1501 E. 10th St. Suite D
Rolla, MO 65401
314-364-0500
Jenkins, Edward R FP
Roubidoux Medical Park
Waynesville, MO 65583
314-774-6423
King, Robert W AN
P. O. Box 1008
Rolla, MO 65401
314-364-1981
Linde, John W OPH
1100 W. 10th St.
Rolla, MO 65401
314-341-2230
Marti, Larry B ORS
1100 W 10th St
Rolla, MO 65401
314-341-2678
Matthews, Richard H ONC
1000 W. 10th St.
Rolla, MO 65401
314-364-3100
McCullough, Nancy J AN
401 Rolla St. #2
Rolla, MO 65401
314-341-8058
Myers, James M GP
P.O. Drawer D
Rolla, MO 65401
314-341-4284
Paskon, Seth IM
303 N Jackson & 4th. Street
Salem, MO 65560
314-729-6036
Place, Howard M ORS
Dept of Orth Surg GLWACH
Ft Leonard Wood, MO 65473
314-368-9445
Pojanasomboon, Pichat OPH
1100 W 10th St
Rolla, MO 65401
314-364-5600
Russell, Barbara E PD
11th and Bishop
Rolla, MO 65401
314-364-4870
Shaw, David A AN
P. O. Box 1086
Rolla, MO 65401
314-364-3100
Slahorek, George J PTH
Gen Leonard Wood Army Hosp
Pathology Dept
Ft Leonard Wood, MO 65473
314-368-9661
Stoecker, William V D
1100 W 10th St.
Rolla, MO 65401
314-364-0122
Stricker, Eamil A GS
10th & Bishop
Rolla, MO 65401
314-364-3599
Stricker, William E A
10th & Bishop
Rolla, MO 65401
314-341-3555
Vandewalker, Mark L A
Allergy Clinic GLWACH
Ft Leonard Wood, MO 65473
314-368-9391
Wan, Shaw P U
632 South Bishop
Rolla, MO 65401
314-364-1014
White, Eugene F OBG
1100 W 10th St.
Rolla, MO 65401
314-364-8100
Young, Robt B FP
700 W 11th St
Rolla, MO 65401
314-364-4870

138 — MINERAL AREA

Auner, J. David FP
128 W. Russell Street
P. O. Box 85
Ironton, MO 63650
314-546-3434
Boatright, Kevin FP
301 W. Liberty
Farmington, MO 63640
314-756-6751
Borrego, Raul A IM
301 W. Liberty
Farmington, MO 63640
314-756-6751
Cancelada, Juan OBG
317 North "A" Street
Farmington, MO 63640
314-756-6751
Carleton, Chas E GP
Med Arts Clinic
Farmington, MO 63640
314-756-6751
Chastain, Chas W FP
Family Health Care
815 E. Main St.
Flat River, MO 63601
314-431-6600
Chung, Kap Eun GS
205 West Main
Fredericktown, MO 63645
314-783-6428
Datta, Narendar K OBG
P. O. Box 168
Crystal City, MO 63019
314-937-8668
Davis, Thomas N P
P. O. Box 341
Mountain View, MO 65548
Dent, George W OBG
Medical Arts Clinic
301 West Liberty
Farmington, MO 63640
314-756-6751
Dettmer, Robt F GP
P. O. Box 307
Ironton, MO 63650
314-546-2415
Dierker, Harry D FP
301 W Liberty St
Farmington, MO 63640
314-756-6751
DuMontier, Edward H FP
402 Oak Terrace
Farmington, MO 63540
Ellegood, James H GP
43 Marquette
Lake St. Louis, MO 63367
314-625-3281
Farmer, Norma D P
15 Westmount Dr.
Farmington, MO 63640
314-756-7803
Fitz, John R OPH
140 Westmount Dr.
Farmington, MO 63640
314-756-6408
Grechus, John J FP
Medical Arts Clinic, Inc.
301 W. Liberty St.
Farmington, MO 63640
314-756-6751

---

*Doctor of osteopathy.

158 — NORTHWEST

Griffin, Darrell L D
301 W. Liberty
Medical Arts Clinic
Farmington, MO 63640
314-756-8908
Hamburg, Eric D IM
301 W. Liberty
Farmington, MO 63640
314-756-6751
Hardy, Stanton L FP
1000 N Main St
Desloge, MO 63601
314-431-3128
Huckstep, Robt A IM
Rt. 6, Box 6506
Farmington, MO 63640
314-756-5340
Karraker, Alvan G GP
301 W Liberty St
Medical Arts Clinic
Farmington, MO 63640
314-756-6751
Kim, Longius H GS
2 Professional Building
200 Henry Bub Dr
Potosi, MO 63664
314-438-6285
King, Frank K GS
4 Lake Drive
Bonne Terre, MO 63628
314-358-5960
Mardini, Edward E GS
P. O. Box 68
Bonne Terre, MO 63628
McKinney, William D FP
202 W. Russell
Ironton, MO 63650
314-546-7311
Menne, Marvin C GP
109 N. Main St.
Ironton, MO 63650
314-546-7437
Mullen, Jack IM
509 St. Francis Road
Bonne Terre, MO 63628
314-358-3492
Oliver, George A GS
Medical Arts Clinic
Farmington, MO 63640
314-756-6751
Pichardo, Javier A P
701 Eastbridge Dr.
St. Peters, MO 63376
Sermchief, Chaiyarat OBG
501 Armory St.
Fredericktown, MO 63645
314-783-2342
Tuttle, Jay F P
526 Sara Lane Condo 12
Creve Coeur, MO 63141
Vibulakaopun, Pairat IM
527 Benham St.
Bonne Terre, MO 63628
314-358-5577
Watkins, Geo L GS
P. O. Box 1745
Rancho Santa Fe, CA 92067

146 — MONTGOMERY

Byland, Saml J GP
120 Hudson St
Wellsville, MO 63384
314-684-2208

148 — NORTH CENTRAL

English, Milton T ORS
2902 N. Baltimore
Kirksville, MO 63501
816-665-5611
Hoffman, Leanna M IM
1905 Canvas Back
Kirksville, MO 63501
Phillips, Ronald L FP
1201 S. Baltimore
Kirksville, MO 63501
816-665-2892

150 — NORTHEAST

Ahlum, Sandra J OBG
P.O. Box 311
Hannibal, MO 63401
314-221-5250
Avila, Estrella Z IM
1734 Market St.
Hannibal, MO 63401
314-221-7176
Bach, Lysle M R
4209 W Ely Rd
Hannibal, MO 63401
314-221-5500
Bell, Robt M P
165 Lake Apollo
Hannibal, MO 63401
Buben, Robt W GS
2910 St Marys Ave
Hannibal, MO 63401
314-221-0996
Bukstein, Michael J GS
P.O. Box 311
Hannibal, MO 63401
314-221-5250
Burns, Francis R OBG
11 San Reno Dr.
Hannibal, MO 63401
Burton, Dale F GS
P O Box 311
Hannibal, MO 63401
314-221-5250
Comer, Julian R DR
Rt. 3
New London, MO 63459
314-221-5500
Florendo, Federico N PTH
Hannibal Reg Health Care
Hannibal, MO 63401
314-248-0826
Florendo, Purificacion T OBG
9 Hamlin Heights
Hannibal, MO 63401
314-221-2116
Foreman, Phillip B GS
36 El Rancho Dr.
Hannibal, MO 63401
314-221-0428
Glickman, Andrew S AN
311 N. Hayden
Hannibal, MO 63401
314-221-4028
Greene, Harry L CD
1911 Harrison Hill
Hannibal, MO 63401
314-221-0364
Ha, Richard J IM
Rt. 1 Sky View Ranch
Hannibal, MO 63401
314-221-8225
Hall, Stanley G PTH
Sycamore Spring
RFD #2
Hannibal, MO 63401
314-221-5646
Halpin, Stephen E IM
711 Grand Ave.
Hannibal, MO 63401
314-221-5250
Hamel, Peter C PTH
109 Virginia
Hannibal, MO 63401
314-221-0414
Hamlin, Wyeth IM
#5 Briarwood
Hannibal, MO 63401
314-221-0492
***Hevel, Robert W** FP
410 Linnwood Dr.
Palmyra, MO 63461
314-769-2231
Johnson, Lent C FP
P.O. Box 311
Hannibal, MO 63401
314-221-5250
Kerkemeyer, George IM
2910 St. Mary's Ave.
Hannibal, MO 63401
314-221-0996
Kruse, Carl R FP
706 S Dickerson St
Palmyra, MO 63461
314-769-2335
Lane, Charles A GS
711 Grand Ave.
Hannibal, MO 63401
314-221-5250
Lichty, Chas A GP
Shelbina, MO 63468
314-588-4476
Long, Priscilla E IM
711 Grand AVe.
Hannibal, MO 63401
314-221-5250
Mann, James K PD
4074 Hillside Drive
Hannibal, MO 63401
314-221-5250
McHardy, Bryson R PD
P.O. Box 311
Hannibal, MO 63401
314-221-5250
Memken, John A FP
711 Grand Avenue
Hannibal Clinic, Inc.
Hannibal, MO 63401
314-221-5250
Ouellette, David F FP
711 Grand Ave.
Hannibal, MO 63401
314-221-5250
Palmer, Russell H GP
706 S Dickerson St
Palmyra, MO 63461
314-769-2335
Plowman, Edward M OPH
1 Northport
Hannibal, MO 63401
Rapp, Earl L GP
Box 311
Hannibal, MO 63401
314-221-5250

Ritterbusch, James K ORS
711 Grand #311
Hannibal, MO 63401
314-221-5250
Steele, James C OBG
2802 Marsh Ave
Hannibal, MO 63401
314-221-5352
Walley, Lynn J OBG
P.O. Box 311
Hannibal, MO 63401
314-221-5250

158 — NORTHWEST

Ahlschier, Allan D DR
St. Frances Hosp Rad Dept
2016 S. Main St.
Maryville, MO 64468
816-562-2600
Almuttar, Wasif F AN
1802 S. Main
P. O. Box 385
Maryville, MO 64468
816-562-2573
Bare, Edward F GP
102 S 6th
Tarkio, MO 64491
816-736-4215
Bauman, Henry C GP
422 Felix St. #511
St. Joseph, MO 64501
Carlin, Albert L GP
Park Ave
Stanberry, MO 64489
816-783-2192
Carpenter, Wallace GP
100 Cass St
Rock Port, MO 64482
816-744-5361
Chavala, Sudarsan OPH
Maryville Eye Clinic
Hwy 71 S. Box 617
Maryville, MO 64468
816-562-2566
***Combs, Marvin D** GP
606 North College
Albany, MO 64402
816-726-3937
Dean, Walter E FP
114 East South Hills Dr.
Maryville, MO 64468
816-562-2525
Dizney, Desmion M FP
503 Lakeside Dr.
Irving, TX 75062
Dunshee, Robt E FP
P. O. Box 408
Maryville, MO 64468
816-582-4571
Engelken, Michael K FP
502 State
Mound City, MO 64470
816-442-5464
Harr, Patrick B FP
114 E. South Hills Dr.
Maryville, MO 64468
816-562-2525
Havaldar, Kanti L IM
Hwy 71 S, P. O. Box C
Maryville, MO 64468
816-582-2156
Humphrey, James D FP
502 State Street
Mound City, MO 64470
816-442-5464
Hunter, James K FP
High & Main
Fairfax, MO 64446
816-686-2276
Imes, Elvin D FP
3705 Woodrail on the Green
Columbia, MO 65203
Jefferis, Kenneth R GS
114 E. South Hills Dr.
Maryville, MO 64468
816-562-2525

---

*Doctor of osteopathy.

Niedermeyer, Edward L GP
305 Broad St
Tarkio, MO 64491
816-736-4121

Runez, Manuel W GS
Runez Medical Clinic Inc.
1608 S. Main Box 310
Maryville, MO 64468
816-562-2922

Tenorio, Arturo A GS
P. O. Box Park Avenue
Stanberry, MO 64489
816-783-2845

Tenorio, Genoveva P
Hwy 136-E Physicians Bldg
Albany, MO 64402
816-726-3974

Wempe, Geo R FP
2 Faustina Place
Maryville, MO 64468

Wurm, Michael J FP
114 E. South Hills Dr.
Maryville, MO 64468
816-562-2525

166 — OZARKS

Anderson, Paul B GP
113 W Hickory
Neosho, MO 64850
417-451-1234

Apostol, Andres G GS
801 Lincoln St
Monett, MO 65708
417-235-6297

Barnes, Larry G IM
113 West Hickory
Neosho, MO 64850

Betz, Richard J IM
Sale Mem Hosp
Neosho, MO 64850
417-451-1234

Betz, Robert F GS
113 West Hickory
Neosho, MO 64850
417-451-1234

Bizek, J L GS
550A Hudson Ave.
Aurora, MO 65605
417-678-5175

Blankenship, Geo W GP
113 W. Hickory
Neosho, MO 64850
417-451-1234

Bowman, Melvin C GP
Drawer 100
Neosho, MO 64850
417-451-1155

Brown, Frederick B GP
Aurora Medical Building
550 Hudson Ave.
Aurora, MO 65605
417-678-5176

Campbell, Daniel C TS
Rt. #1 Box 30
Mount Vernon, MO 65712
417-466-3711

Carter, James R GS
113 W Hickory St
Neosho, MO 64850
417-451-1234

Christianson, Chas S PUD
Route 1
Box 85
Mount Vernon, MO 65712
417-466-3400

Cruz, Sergio G IM
St Vincent Hosp
801 Lincoln
Monett, MO 65708
417-235-7824

Dabbs, Wilbur D GP
Sale Mem Hosp
Neosho, MO 64850
417-451-1234

Esparrago, F R GS
808 Euclid
Monett, MO 65708
417-235-3137

Galinsky, Leon J PUD
6776 E. Via Dorado
Tucson, AZ 85715

Gardner, Jos W GP
8 Walnut Lane
Kimberling City, MO 65686
417-739-4418

Glass, Wm J GP
402 Grand
Monett, MO 65708
417-235-7448

Glover, Kenneth GP
P. O. Box 227
Mount Vernon, MO 65712
417-466-2323

Hamilton, Wm P GP
1321 S. Elliott
Aurora, MO 65605
417-678-5194

Hellweg, Chas E PUD
610 N. Myrtle Street
Pierce City, MO 65723
417-476-2816

Hinojosa, Luis A IM
207 S. Market
Mt. Vernon, MO 65712
417-466-2640

Huntington, Ione PUD
P. O. Box 158
Shell Knob, MO 65747
417-858-6869

Isaac, Anita M PM
P. O. Box 404
Ash Grove, MO 65604

Kenney, Roy E GP
113 W Hickory
Neosho, MO 64850
417-451-1234

Kherdekar, Subhash S PUD
600 N. Main
Mt. Vernon, MO 65712

Kime, Ricky L IM
92 S. Main St.
Cassville, MO 65625
417-847-4797

Lentz, Harold C GP
603 Highland Place
Neosho, MO 64850
417-451-1234

McFarland, Rodney J FP
113 Hickory
Neosho, MO 64850
417-451-1234

McMillan, David L IM
113 West Hickory
Neosho, MO 64850
417-451-1234

Montellano, Arturo H OBG
P. O. Box 328
Monett, MO 65708
417-235-3794

Morrison, Thos A GP
203 Washington
Aurora, MO 65605
417-678-3225

Mueller, Mark R FP
1401 Old Highway 60
Neosho, MO 64850
417-451-2060

Newman, Mary J GP
P O Drawer H
Cassville, MO 65625

Occeno, Victor G GS
808 Euclid
Monett, MO 65708
417-235-6007

Olive, Geo C A
113 W Hickory St
Neosho, MO 64850
417-451-1234

Pennington, Michael S FP
815 Lincoln Ave.
Monett, MO 65708
417-235-6077

Romanace, Jean P PM
MO Rehab Center
600 N. Main
Mt. Vernon, MO 65712
417-466-3711

Rooney, William R FP
15831 W. Locust St.
Olathe, KS 66062

Schnurr, Thomas C FP
113 W. Hickory
Neosho, MO 64850
417-451-1224

Stringer, Kenton L FP
550 Hudson
Aurora, MO 65605
417-678-5176

Swetnam, Jeffrey A GS
113 W. Hickory
Sale Hospital
Neosho, MO 64850

Watts, Samuel M FP
Aurora Medical Bldg.
550 Hudson
Aurora, MO 65605
417-678-5176

White, Russell D FP
Aurora Medical Building
550 Hudson Ave.
Aurora, MO 65605
417-678-5176

170 — PEMISCOT

Finch, William O GP
P. O. Box 508
Hayti, MO 63851
314-359-2071

Hazel, James G R
Box 198
Caruthersville, MO 63830
314-333-0707

Lopez, Ruben E GP
P.O. Box 434
Hayti, MO 63851
314-359-1306

McCoy, Warren R GP
1117 Ward Ave
Caruthersville, MO 63830
314-333-2711

Painter, Lattie B GP
204 E 3rd St
Portageville, MO 63873
314-379-5467

174 — PERRY-STE. GENEVIEVE

Allego, Melquiadito M NM
Radiology Dept.
Perry County Mem Hosp
Perryville, MO 63775
314-547-4677

Carron, Oscar A OS
208 N. Waters
Perryville, MO 63775

DeGenova, Gerard H GP
585 Cedar Lane
Ste Genevieve, MO 63670

***Eckstein, Tim E** FP
P. O. Box 7
Ste. Genevieve, MO 63670

Fairchild, James F GP
12 S Jackson
Perryville, MO 63775
314-547-2553

Feltz, Lawrence W GP
106 N. Jackson
Perryville, MO 63775
314-547-4585

Gonzales, Jose H U
Perry Plaza Medical Cen
Perryville, MO 63775
314-547-1231

Hoye, Robert C GS
Pointe Basse Plaza
Ste. Genevieve, MO 63670
314-883-2446

Limpiphiphatn, Dhajphong GS
334 N. Main
Perryville, MO 63775
314-547-8321

Limpiphiphatn, Ester P PD
334 N. Main
Perryville, MO 63775
314-547-8321

Lutkewitte, Jos F FP
Hospital Lane & Center Dr.
Ste Genevieve, MO 63670
314-883-2782

McDermott, Alfred E GP
1104 W. Reddick St.
Perryville, MO 63775

Pontillas, Job B GS
Perry Plaza Med. Ctr.
Perryville, MO 63775
314-547-8219

Raju, Niranjana IM
990 Park Dr.
Ste. Genevieve, MO 63670
314-883-7474

Utterman, Wm F GS
Lake Forest Estates
Ste Genevieve, MO 63670

Yang, John S OBG
Pointe Basse Plaza Mall
Ste. Genevieve, MO 63670
314-883-5715

178 — PETTIS

Allcorn, Donald K FP
302 Hiway 65 North
Lincoln, MO 65338
816-547-3915

Azan, Abraham N OBG
600 E. 13th St.
Sedalia, MO 65301
816-827-0015

Azan, Kenneth N IM
600 E. 13th
Sedalia, MO 65301
816-827-0015

---

*Doctor of osteopathy.

Boyce, John M PTH
2703 Clark Lane
Columbia, MO 65201
314-581-1760

Brazos, John C U
RR #6
Sedalia, MO 65301
816-826-0606

Campbell, Albert J GP
625 E 13th St
Sedalia, MO 65301
816-826-8989

Clemens, Robert M AN
711 W. Broadway
Sedalia, MO 65301
816-826-8384

Cole, Wm R GS
1712 S. Lafayette
Sedalia, MO 65301
816-827-2524

Daum, Harold F R
Rte 1
Sedalia, MO 65301

Edmonds, Robt W PD
1718 S Ingram
Sedalia, MO 65301
816-827-0500

Edwards, David R GP
1619 S. Moniteau
Sedalia, MO 65301

Edwards, Ryan K ORS
1718 South Ingram
Sedalia, MO 65301
816-827-0505

Eldenburg, Donald O GP
700 S Limit
Sedalia, MO 65301
816-826-7300

Farkas, James R R
Bothwell Memorial Hospi
Radiology Dept
Sedalia, MO 65301
816-826-8833

Foster, R. Steve U
1704 S. Ingram
Sedalia, MO 65301
816-826-7077

Hartman, Rodney C DR
644 E. 13th St.
Bothwell Mem. Hosp.
Sedalia, MO 65301
816-826-8833

Hopkins, Thomas S IM
Rt 1
Hughesville, MO 65334
816-826-4820

Hopkins, Thos J GP
1506 W. Broadway
Sedalia, MO 65301

Hornbostel, Phillip M GS
1718 S. Ingram St.
Sedalia, MO 65301
816-827-0423

Horochowski, Alejandro GS
1704 South Ingram
Sedalia, MO 65301
816-826-5950

Kiburz, Douglas W ORS
1718 S. Ingram
Sedalia, MO 65301
816-826-5890

Lamy, John E GS
400 DAL-WHI-MO Court
Sedalia, MO 65301

Lowe, Alvin L GP
RR4 Box 242A
Sedalia, MO 65301
816-826-3265

Proctor, Donald C GP
610 West 3rd Street
Sedalia, MO 65301
816-826-7300

Roedel, Kathryn R IM
1701 S. Lafayette
Sedalia, MO 65301

Roehrs, David H R
612 S. Ohio
Sedalia, MO 65301
816-827-5244

Stockwood, Robt C OBG
1718 S Ingram
Sedalia, MO 65301
816-826-1381

Sull, Won-Jong GS
1501 South Grand
Sedalia, MO 65301
816-827-2330

Van Dyke, Elmer H OBG
1718 S Ingram
Sedalia, MO 65301
816-826-1381

Woolery, William G IM
1712 S. Lafayette
Sedalia, MO 65301
816-827-2526

Worley, Charles A GP
102 West Ray St.
Sweet Springs, MO 65351

Wuellner, David H IM
1712 S. Lafayette
Sedalia, MO 65301
816-827-2526

186 — PIKE

Glenn, Edward A GS
RR 1
Louisiana, MO 63353
314-754-5555

Martin, Wendell J GP
211 S 3rd St
Louisiana, MO 63353
314-754-5555

Middleton, John W FP
1800 South Carolina St.
Louisiana, MO 63353

Pitney, Phillip W FP
211 S 3rd
Louisiana, MO 63353
314-754-5555

Stuerman, Lawrence G FP
2406 Georgia St.
Louisiana, MO 63353
314-754-5555

189 — ST. CHARLES-LINCOLN

Alul, Mohammad Ali H PD
#2 Westbury Dr.
St Charles, MO 63301
314-723-1711

Anderson, Frank K D
330 First Capitol Dr. #460
St. Charles, MO 63301

Bagwe, Ranjit M CD
1301 Boonslick
St Charles, MO 63301
314-724-6700

Baird, Keim L P
2860 W Clay St
St Charles, MO 63301
314-946-5844

Bergmann, Daniel J GS
#6 Jungermann Circle Ste 102
St. Peters, MO 63376
314-441-2122

Binz, Donald E FP
145 Centre Pointe Dr. Ste A
St. Charles, MO 63303
314-928-3300

Brown, Robert J OBG
2730 Highway 94 South
St. Charles, MO 63303
314-441-6441

Cabrera, Tomas V GS
70 Jungermann Circle Ste 202
St. Peters, MO 63376
314-441-6340

Canale, John P P
1 Westbury Sq. Bldg A
St. Charles, MO 63301
314-946-8810

Cannon, Richard E PDA
12 Westbury
St. Charles, MO 63301
314-723-7333

Canty, Eugene J IM
1824 Sibley St.
St Charles, MO 63301
314-724-0692

Carpenter, James L U
330 1st Capitol Drive #440
St Charles, MO 63301
314-723-4590

Choi, Sei Young P
1360 S. 5th St. #306
St. Charles, MO 63301
314-946-3886

Clever, Henry W PD
1301 Boonslick Rd
St Charles, MO 63301
314-723-0511

Clever, Victor G OPH
1005 Fairgrounds
St Charles, MO 63301
314-946-6986

Commerford, John F GP
1301 Boonslick Rd
St Charles, MO 63301
314-724-6700

Connelly, Michael W OPH
10030 Conway
Ladue, MO 63124
314-946-6986

Conoyer, J. Michael OTO
70 Jungermann Cir, Suite 401
St. Peters, MO 63376
314-447-3100

Copeland, Jeffrey G PSF
330 First Capitol Drive
Suite 360
St. Charles, MO 63301
314-946-3808

Curry, Michael J IM
2850 W Clay St
St Charles, MO 63301
314-724-1940

Cusworth, Robert GE
1301 Boonslick
St. Charles, MO 63301
314-723-2555

Damron, Edward O GP
309 Griffin St
Elsberry, MO 63343
314-898-5450

Del Pizzo, Ferdinand OBG
1301 Boonslick
St Charles, MO 63301
314-723-4143

Dieterich, Russell B OBG
2730 Highway 94 S. #202
St. Charles, MO 63303
314-447-6441

DiFilippo, Emil A ORS
2633 West Clay St.
St Charles, MO 63301
314-946-7050

Duling, Gerald J PD
St Joseph Hospital
Third St & First Cap
St Charles, MO 63301
314-724-2810

Duncan, David T OBG
70 Jungermann Circle #422
St. Peters, MO 63376

Erie, Michael N GS
2 Westbury
St. Charles, MO 63301
314-946-4469

Fajatin, Romulo J IM
#2 Westbury
St. Charles, MO 63301
314-946-9130

Feldman, Mark R OBG
330 First Capitol #340
St. Charles, MO 63301
314-434-7593

Fleming, Robt J OPH
1005 Fairgrounds
St Charles, MO 63301
314-724-7116

Frank, Bruce S OPH
3889 S. Service Road
St. Charles, MO 63303
314-441-7900

Friesen, Randall G OBG
1301 Boonslick
St. Charles, MO 63301
314-723-4143

Geisman, Richard A GE
#70 Jungermann Circle #200
St. Peters, MO 63376
314-447-9784

Goldkamp, John D PD
2 Westbury
St Charles, MO 63301
314-723-2525

Harding, Clarke T PTH
300 First Capitol
St. Charles, MO 63301
314-724-2810

Harrison, Thomas J PD
St Charles County Pediatrics
2730 Hiway 94 S.
St. Charles, MO 63303

Hu, Raymond J IM
6 Jungermann Circle
St. Peters, MO 63376
314-447-4500

James, Kathleen M GS
2 Westbury
St. Charles, MO 63301
314-724-6633

***Jones, James E** GP
418 S. Church
P.O. Box 10
St. Peters, MO 63376
314-278-6578

Kahn, Joseph A PD
2730 Highway 94 South #200
St. Charles, MO 63303
314-441-5437

Kamada, Tsutomu GS
1001 Hwy K Suite 2
O'Fallon Med. Ctr.
O'Fallon, MO 63366
314-272-5454

Kampfe, Paul W GS
2850 West Clay
St. Charles, MO 63301
314-946-7838

Keefe, David M PD
#2 Westbury Drive
St Charles, MO 63301
314-723-2525

---

*Doctor of osteopathy.

Keesal, Dennis EM
300 First Capitol Dr.
St. Joseph Health Care
St. Charles, MO 63301
314-724-2810

Keller, Robt M GP
712 Parr Dr.
Wentzville, MO 63385
314-327-4120

Keohane, Mark ORS
2633 W. Clay St.
St Charles, MO 63301
314-946-7050

Kingsbury, Robt J GS
6 Jungermann Circle Ste 102
St. Peters, MO 63376
314-441-2122

Kister, Geo E GP
45 Honey Locust Lane #107B
St. Charles, MO 63301

Kulkarni, Satish R P
13516 Weston Place
Town & Country, MO 63131
314-469-7235

Lamb, Eileen IM
2730 Highway 94 S. Suite 102
St. Charles, MO 63303
314-441-6072

Linsenmeyer, Charles M ORS
2633 W. Clay St.
St Charles, MO 63301
314-946-7050

Marrs, David B D
330 First Capitol Dr. #460
St. Charles, MO 63301
314-946-7608

McCabe, Eugene J OPH
1005 Fairgrounds
St. Charles, MO 63301
314-946-6986

McCollister, David L GS
200 Medical Plaza
Lake St. Louis, MO 63367
314-625-2662

Meltz, Gary J IM
2730 Highway 94 South #101
St. Charles, MO 63303
314-447-7038

Menendez, Silvana Y P
1360 E. Fifth St.
St. Charles, MO 63301
314-946-6991

Mentel, John J IM
6 Jungermann Circle
Suite 108
St. Peters, MO 63376
314-441-7955

Meyers, Jerry R GS
6 Jungermann Circle #102
St. Peters, MO 63376
314-724-0101

Minkoff, I. Monica HEM
#6 Jungermann Circle
St Peters, MO 63376
314-441-9393

Moeller, F. Delbert OBG
200 Medical Plaza Suite 101
Lake St. Louis, MO 63367
314-878-6977

Mohapatra, Raj N U
70 Jungerman Circle Ste 202
St. Peters, MO 63376
314-447-6949

Muhm, Harvard Y GS
1301 Boonslick
St Charles, MO 63301
314-723-1144

Muzaffaruddin, Mohammed AN
12831 Wood Valley Ct.
St. Louis, MO 63131

Olson, Richard O GS
2850 W Clay St
St Charles, MO 63301
314-724-1940

Padilla, Pedro C U
#15 Manor Rd.
Troy, MO 63379
314-528-6844

Penkoske, Michaele M IM
24 Lake Forest Drive
St. Charles, MO 63301
314-946-1674

Perlmutter, John C OPH
2860 W. Clay St.
St. Charles, MO 63301
314-724-6880

Perna, Vincent P PTH
Smith-Kline-Beecham Clinical
2040 Concourse Dr.
St. Louis, MO 63146

Piper, Terrence L ORS
20 Jungermann Cir. Ste. 405
St. Peters, MO 63376
314-447-3444

Poggemeier, Wm H FP
119 First Capitol Dr.
St. Charles, MO 63301
314-724-6336

Qalbani, Mahmood A AN
4105 Providence Dr.
St. Charles, MO 63301

Richardson, Tyrun K U
116 First Capitol Drive
St. Charles, MO 63301
314-946-6959

Roter, Alexander M OBG
2 Westbury Dr
St Charles, MO 63301
314-946-5002

Rother, Paul H IM
1301 Boonslick Rd
St Charles, MO 63301
314-724-6700

Roxas, Generoso P IM
533 Jefferson Street
St. Charles, MO 63301
314-723-5116

Sanchez, Guadalupe D
70 Jungermann Circle Ste 204
St. Peters, MO 63376
314-447-5197

Schaberg, James E ORS
2633 West Clay
St. Charles, MO 63301
314-946-7050

Schlansky, Howard J PD
2730 Highway 94 South #200
St. Charles, MO 63303
314-441-5437

Schnarr, William IM
330 First Capitol Dr. #470
St. Charles, MO 63301

Schneider, Thos A GS
2850 W Clay
St Charles, MO 63301
314-724-1940

Schuetz, Alfred IM
1301 Boonslick
St Charles, MO 63301
314-724-6700

Schuetz, Evelyne G OBG
1301 Boonslick
St. Charles, MO 63301
314-723-4143

Siler, Thomas M PUD
330 First Capitol Dr. #470
St. Charles, MO 63301
314-946-1650

***Sill, William** FP
#6 Jungermann Circle
Suite 101
St Peters, MO 63376
314-447-6050

Simowitz, Fredric M N
20 Vouga Lane
St. Louis, MO 63131
314-872-9070

Smoller, Martin B IM
7624 Westmoreland
St Louis, MO 63105
314-724-1940

Soucy, John C IM
2850 W Clay St
St Charles, MO 63301
314-724-1940

Steiman, Barry OBG
11636 Chieftain
Creve Coeur, MO 63141
314-724-1940

Stufflebam, Brian W IM
6 Jungermann Circle
Suite 201
St. Peters, MO 63376
314-724-1940

Suarez-Solar, Pedro L P
1360 S 5th St Suite 270
St Charles, MO 63301
314-946-6991

Thiele, Otto K GS
2 Westbury
St Charles, MO 63301
314-724-6633

Uhlemann, John H D
1301 Boonslick
St Charles, MO 63301
314-724-6700

Umar, Ibrahim S PD
4200 N. Cloverleaf
Suite A
St. Charles, MO 63301
314-922-9182

Vighi, James R OTO
2850 W Clay
St Charles, MO 63301
314-724-1940

Vivian, Gary D OBG
#70 Jungermann Circle
Suite 201
St. Peters, MO 63376
314-441-6002

Walsh, Martin J IM
15 Warwick Ct.
St. Charles, MO 63301
314-724-1940

Westerfeld, Roy A PD
1301 Boonslick
St Charles, MO 63301
314-723-0511

Willman, Martin L OTO
2860 W Clay
St Charles, MO 63301
314-946-0821

Wipfler, Earl J GS
405 Duckett Place
St. Charles, MO 63301
314-724-0101

Yarwood, Robert L OBG
200 Medical Plaza Suite 101
Lake St. Louis, MO 63367
314-625-8088

190 — ST. LOUIS METRO

Abada, Roland AN
12527 Ridgemoor Lake Ct.
St. Louis, MO 63131
314-525-1953

Abbott, David A IM
7450 B Grant Village Dr.
St. Louis, MO 63123
314-862-5252

Abel, Charles C IM
One Barnes Hosp Plaza
Suite 16416
St. Louis, MO 63110
314-367-4800

Abelardo, Miguel I IM
300 S Grand
St Louis, MO 63103
314-658-5647

Abinoja, Conrado B IM
4909 Lindenwood
St Louis, MO 63109
314-351-6134

Abodeely, Daniel A R
10010 Kennerly Road
St. Anthony's Med Ctr
St. Louis, MO 63128
314-525-1155

Abrams, Morris U
1311 Gilbert
St. Louis, MO 63119

Abu Dalu, Ziad FP
100 N. Euclid #706
St. Louis, MO 63108
314-367-3711

Accardo, Pasquale J PD
7275 Emerald Forest Dr.
St. Louis, MO 63129
314-577-5609

Aceto, Thomas PD
1465 S. Grand Blvd.
St. Louis, MO 63104
314-577-5648

Ackerman, Lauren PTH
#8 Chickadee Way
East Setauket, NY 11733
516-444-3011

Adams, Allen G ORS
439 S. Kirkwood Rd.
St. Louis, MO 63122
314-966-8887

Adelmann, Eugene N
10004 Kennerly #292B
St. Louis, MO 63128
314-849-5144

Adler, Benard C OTO
100 Aberdeen
St. Louis, MO 63105
314-726-6669

Aff-Drum, Helen PD
1412 Spoede Rd
St Louis, MO 63131
314-522-6410

Afuwape, Emanuel A GS
2102 State St.
Box 2677
E. St Louis, IL 62205
618-274-4640

Aguinaldo, Jaime A IM
9313 Manchester Rd
St Louis, MO 63119
314-961-5656

Ahadi, Abd U IM
13029 Ambois Dr.
St Louis, MO 63141
314-658-1128

Ahern, Archibald M IM
8835 Rock Forest Drive
St. Louis, MO 63123
314-644-7100

Ahlering, George H OBG
621 S. New Ballas #7003
St. Louis, MO 63141
314-432-3489

---

*Doctor of osteopathy.

Ahlering, George P OBG
621 S. New Ballas
St. Louis, MO 63141
314-438-3489

Ahmad, Aqeeb FP
6917 W. Florissant
St. Louis, MO 63136
314-383-1100

Ahmad, Bashir AN
18306 Ridge Crest Acres Dr.
Pacific, MO 63069
314-768-8300

Ahmad, Naseer IM
6125 Clayton Ave. #220
St. Louis, MO 63139
314-644-2333

Ahmad, Nusrat J OBG
1141 Templeton Place
Ballwin, MO 63011
314-878-5137

Aitken, Louis F IM
12 St. Andrews Dr.
St. Louis, MO 63124

Akbarnia, Behrooz A ORS
1465 S. Grand Blvd. #528
St. Louis, MO 63104
314-577-5646

Aker, Umit T IM
3009 N. Ballas Rd. #310
St. Louis, MO 63131
314-432-2737

Al-Aly, Robert M R
9 Doubletree
St. Louis, MO 63131
314-525-1155

Albanna, Faisal J NS
6725 Chippewa
St. Louis, MO 63109
314-644-7111

Albera, Victor H AN
Gerald Family Clinic
Rt. 2, Box 236
St. Clair, MO 63077
314-629-4944

Albert, I. Renee D
2428 Woodson Rd.
Overland, MO 63114
314-427-2424

Albus, Thomas E ORS
12255 DePaul Drive #360
Bridgeton, MO 63044
314-291-7510

Alegre, Jorge M IM
222 S. Woods Mill #310
Chesterfield, MO 63017
314-576-6700

Aleksander, Bernardo G P
1420 Grattan St.
St Louis, MO 63104
314-241-7600

Alex, Morris IM
Associated Internists, Inc
675 Old Ballas Rd. #103
St. Louis, MO 63141
314-567-1902

Alexander, George K GS
3009 N. New Ballas Rd. #207
St Louis, MO 63131
314-432-8882

Ali, Syed S CHN
2120 Madison Ave. Suite 206
Granite City, IL 62040
618-876-6321

Allen, Brent T GS
One Barnes Hosp Plaza #5103
St. Louis, MO 63110
314-362-7408

Allen, James H PTH
Christian Hospital N.E.
11133 Dunn Rd.
St. Louis, MO 63136
314-355-2300

Allen, Melvin A OBG
14 Lindworth Dr.
St Louis, MO 63124
314-821-3900

Allen, Willard M OBG
14180 Burntwoods Rd.
Glenwood, MD 21738

Almiron, Osias A GS
4581 Gravois P.O. Box 189
House Springs, MO 63051
314-671-4728

Alonso, J. Mario FP
2900 Lemay Ferry Rd.
St Louis, MO 63125
314-487-3155

Alonso-Yague, Pascual IM
4585 Washington
Florissant, MO 63033
314-839-3200

Altepeter, H. Martin GS
621 S. New Ballas Rd. #437
St. Louis, MO 63141
314-993-2930

Alvarez, Ulises C IM
2175 Charbonier
Florissant, MO 63031
314-921-4420

Amato, Maryellen DR
4903 Southridge Park Dr.
St. Louis, MO 63129
314-525-1000

Amin, Navin J OPH
5535 Delmar Blvd.
St Louis, MO 63112
314-367-7077

Amjad, Mohammad T PD
10004 Kennerly Rd. #215
St. Louis, MO 63128
314-849-6030

Andersen, David A ORS
1034 South Brentwood #650
St. Louis, MO 63117
314-721-7325

Anderson, Charles B GS
6343 Alexander Dr
St. Louis, MO 63105
314-362-7406

Anderson, Dixie J R
510 South Kingshighway
St. Louis, MO 63110
314-362-2927

Andrus, Charles H GS
3635 Vista POBox 15250
St. Louis, MO 63110
314-577-8372

Anglo, Luis B FP
10004 Kennerly Rd
Suite 155
St Louis, MO 63128
314-849-1200

Anslinger, David L IM
14329 Lake Tahoe Dr
Chesterfield, MO 63017
314-821-9150

Anstey, Geo C OBG
10449 St Charles Rock
St. Ann, MO 63074
314-429-1928

Anstey, John T OBG
10449 St. Charles Rock Rd.1
St. Ann, MO 63074
314-429-1900

Anthony, Lyndon U NS
3635 Vista Ave at Grand
P.O. Box 15250
St. Louis, MO 63110
314-577-8795

Applewhite, Thomas A DR
615 S. New Ballas
St. Louis, MO 63141
314-569-6031

Apprill, Phillip G IM
6400 Clayton Rd.
St. Louis, MO 63117
314-645-6450

Archer, Carol R R
St. Louis Univ Hosp
3635 Vista Ave.
St. Louis, MO 63110
314-577-8025

Arenos, Proceso T GS
3009 N Ballas Rd. #216
St. Louis, MO 63131
314-567-5377

Arias, Fernando OBG
621 S. New Ballas Rd.
St Louis, MO 63141
314-569-6880

Arneson, Axel N OBG
6536 Devonshire
St Louis, MO 63109

Arney, Wm G P
329 S. Spoede Road
St. Louis, MO 63141

Arnold, Kenneth J GS
222 S. Woods Mill Rd. #300N
Chesterfield, MO 63017
314-362-7272

Arnot, John P ORS
1034 S Brentwood Blvd #650
St Louis, MO 63117
314-721-7321

Aronberg, Jerome M D
141 N Meramec #315
St Louis, MO 63105
314-863-6221

Arribas, Neva P OPH
One Barnes Hosp Plaza 17413
St Louis, MO 63110
314-367-1181

Asaro, Phillip V FP
2202 S. 12th St.
St. Louis, MO 63104
314-772-8348

Aubuchon, Craig E ORS
621 S. New Ballas #101
St. Louis, MO 63141
314-567-0600

Auclair, Ronald J RHU
456 N. New Ballas Rd. #126
St. Louis, MO 63141
314-569-3305

Auer, Arthur I GS
621 S. New Ballas #307
St Louis, MO 63141
314-567-6666

Aufderheide, G. Russell IM
216 Northland Office Bldg.
St Louis, MO 63136
314-383-6818

Augustin, Cesar R
3400 N. Kingshighway
St. Louis, MO 63115
314-385-3600

Avins, Laurence R OPH
1034 S. Brentwood #816
St. Louis, MO 63117
314-727-6711

Avioli, Louis V IM
216 S Kingshighway
St. Louis, MO 63110
314-454-8410

Awadalla, Sylvia N
Barnes Hosp Plaza Ste 16304
St. Louis, MO 63110
314-367-3122

Ayata, Sedat M AN
41 Ladue Estates Dr.
St Louis, MO 63141
314-768-8300

Aykent, Yavuz CD
6400 Clayton Rd. Suite 212
St. Louis, MO 63117
314-645-6450

Aylward, Howard J IM
911 S Brentwood Blvd
St Louis, MO 63105
314-725-2100

Aylward, Howard J PS
4517 Carriage Hill Drive
Santa Barbara, CA 93110

Ayvazian, Vatche H GS
621 S New Ballas Rd
St. Louis, MO 63141
314-569-6442

Azzam, Farid J AN
3635 Vista Ave.
St. Louis, MO 63110
314-577-5622

Babka, Joseph J GS
10004 Kennerly Rd. #245
St. Louis, MO 63128
314-849-2550

Backer, Matt H OBG
St. Louis Univ Hosp
3635 Vista Ave. #302
St. Louis, MO 63110
314-577-6045

Backer, Robert J NS
13810 Cypress Hollow
Santonio, TX 78232
512-221-4757

Bagby, James W D
1124 Jo Carr
Manchester, MO 63011

Baglan, Robert J TR
615 S. New Ballas Rd.
St. Louis, MO 63141
314-569-6844

Bagwe, Lata R OBG
Suite #105
14377 Woodlake Dr.
Chesterfield, MO 63017
314-878-6236

Bailey, Drennan GS
6356 Clayton Rd
St Louis, MO 63117
314-647-3834

Bailey, Gregory J NS
Microsurgery & Brain Resrch
6725 Chippewa
St. Louis, MO 63109
314-644-7111

Bailey, Marsha L OM
1369 Libra Drive
Arnold, MO 63010
314-344-3787

Bailey, Wm H OPH
9157 E. Milton Ave.
St. Louis, MO 63114

Baker, Carl N FP
11521 Gravois
St. Louis, MO 63126
314-843-1111

Baldwin, Richard ORS
1 Ladue Lane
St. Louis, MO 63124

Bale, Robert D OBG
621 S. New Ballas Suite 4005
St. Louis, MO 63141
314-567-4761

•Doctor of osteopathy.

Balfe, Dennis M DR
510 S. Kingshighway
St. Louis, MO 63110
314-362-2924

Ballal, Hebri S IM
3915 Watson Rd.
St. Louis, MO 63109
314-644-7100

Balster, Vernon H OM
819 Locust
St Louis, MO 63101
314-621-4300

Bandle, Donald F P
3801 January Ave
St. Louis, MO 63109
314-644-1474

Banez, Colita L P
5400 Arsenal
St. Louis, MO 63139
314-892-5774

Banton, M. Roman IM
13634 Peacockfarm Rd
St. Louis, MO 63131
314-289-6470

Banton, Thomas J ORS
12255 DePaul Dr
Bridgeton, MO 63044
314-739-7654

Banton, William C IM
13634 Peacockfarm Rd.
St Louis, MO 63131
314-781-7825

Bardsley, John L R
621 S New Ballas Rd
St Louis, MO 63141
314-567-4442

Bari, Wagih A PTH
615 S. New Ballas Rd.
St. Louis, MO 63141
314-569-6120

Barker, Edward T PD
2821 N Ballas Rd #210
St Louis, MO 63131
314-432-1854

Barlow, Val John IM
14443 Bantry Lane Suite 22
Chesterfield, MO 63017
314-527-5425

Barner, Hendrick B CDS
St. Louis Univ Hosp
3635 Vista Ave.
St. Louis, MO 63110
314-577-8350

Barragan, Hector D GS
533 Couch #G67
St. Louis, MO 63122
314-821-8997

Barrett, Scott R OBG
10475 Fair Oaks
Columbia, MD 21044
301-596-0316

Barrow, Jack IM
1034 S. Brentwood #1060
St Louis, MO 63117
314-721-0666

Bart, Gerald N PSF
10004 Kennerly #310
St. Louis, MO 63128
314-842-5082

Bartnick, Mitchel L FP
4330 Apple Grove Lane
St. Louis, MO 63128
314-638-2028

Barton, Premsri T R
950 Francis Place Suite 11
St. Louis, MO 63105
314-863-1888

Bassman, Donald R ORS
675 Old Ballas Rd. #200
St. Louis, MO 63141
314-569-0130

Batan-Co, Ruby L AN
14233 Reelfoot Lake Dr
Chesterfield, MO 63017
314-851-2951

Baue, Arthur E GS
3556 Caroline St. #C207
St. Louis, MO 63104
314-577-8100

Bauer, Jos A PD
1031 Cyann Dr.
Manchester, MO 63011

Bauer, Daniel J IM
621 S. New Ballas Rd. #507
St. Louis, MO 63141
314-432-4415

Bauer, John D PTH
2820 Clearview
St. Louis, MO 63121
314-434-0600

Baula, Armindo G R
609 Jeffersonian Dr
St Louis, MO 63125

Bauschard, Frederick D D
6500 Chippewa #320
St Louis, MO 63109
314-832-6803

Bauwens, Daniel B IM
222 S. Woods Mill Rd. #510
Chesterfield, MO 63017
314-434-8016

Beal, Catherine E DR
6150 Oakland Ave.
St. Louis, MO 63139
314-768-3061

Beare, Lucia V AN
12 Coach-N-Four
St. Louis, MO 63131

Beato, David L IM
6651 Chippewa Ave.
St Louis, MO 63109
314-781-2929

Beaty, Wm R OBG
500 N.W. Plaza
St. Ann, MO 63074
314-739-8500

Becker, Bernard OPH
660 S. Euclid
St. Louis, MO 63110
314-362-5753

Becker, Robt L OBG
777 So. New Ballas Rd. #100E
St Louis, MO 63144
314-567-7303

Becker, Stanley C OPH
7220 Watson Road
St Louis, MO 63119
314-352-5500

Beckette, Edmund OBG
65 Crestwood Drive
St. Louis, MO 63105

Bedwell, Eleanor M PD
830 Colby Lane
St. Peters, MO 63376
314-344-6000

Bedwinek, John M ONC
615 S. New Ballas Rd.
St. Louis, MO 63141
314-569-6844

Behbahani, Parviz M AN
12303 DePaul #1-335
Bridgeton, MO 63044
314-344-6000

Behrens, Donald T GS
3535 S. Jefferson Suite 307
St Louis, MO 63118
314-776-0568

Behrens, Gerald L GS
325 N. Kirkwood Rd #301
St. Louis, MO 63122
314-966-8500

Beidle, Raymond J PD
12255 DePaul
Bridgeton, MO 63044
314-291-4727

Belew, Joe E OBG
224 S Woods Mill Road
Suite 750
Chesterfield, MO 63017
314-576-9797

Bell, Stephen AN
11133 Dunn Road
St. Louis, MO 63136
314-355-2300

Benage, Clarence M GS
11133 Dunn Rd. Suite B 202
St. Louis, MO 63136
314-355-2300

Benecke, James E OTO
3635 Vista Ave. at Grand
P.O.Box 15250
St. Louis, MO 63110
314-577-8884

Benedict, William W IM
522 N New Ballas Rd #349
St. Louis, MO 63141
314-567-3113

Bennett, John OBG
145 Centre Point Suite 219
St. Louis, MO 63303
314-928-1238

Bennett, Kenneth J GS
675 Old Ballas Rd. #200
St. Louis, MO 63141
314-569-0130

Benoist, Walter F PD
119 Church St
St Louis, MO 63135
314-524-3337

Berg, Ralph FP
8064 Watkins Dr.
St Louis, MO 63105

Berg, Edward F OPH
522 N. New Ballas
St. Louis, MO 63141
314-569-1557

Berg, Leonard N
Dept of Neurology Box 8111
660 S. Euclid Ave.
St. Louis, MO 63110
314-362-7149

Bergmann, Martin TS
4910 Forest Park
St Louis, MO 63108
314-361-3676

Bergner, Grace E IM
1311 Gilbert
St. Louis, MO 63119

Berkowitz, Wallace P OTO
6651 Chippewa Ste 221
St. Louis, MO 63109
314-647-8895

Berland, Harry I R
29 Granadaway
St. Louis, MO 63124

Berland, David I P
1221 S. Grand
St. Louis, MO 63104
314-577-8724

Berman, Wm OBG
4910 Forest Park Blvd #318
St Louis, MO 63108
314-361-5220

Bernabe, Florinio H OBG
1313 Camp Jackson Rd.
Cahokia, IL 62206
618-337-5888

Bernabe, Ofelia M IM
2250 Union Rd.
St. Louis, MO 63125
314-544-3700

Bernardo, Kerry L NS
660 S. Euclid Ave. Box 8057
St. Louis, MO 63110
314-362-3457

Berndsen, Gerard H FP
12933 Topping Estates South
St. Louis, MO 63131

Berni, Anthony A R
777 S New Ballas #121E
St Louis, MO 63141
314-567-4350

Bernstein, Aaron M IM
7171 Delmar #100
St Louis, MO 63130
314-863-0033

Berwald, David M GS
3478 Bridgeland Suite #2
Bridgeton, MO 63044
314-739-8200

Berwald, Irvin I FP
747 Old Bonhomme Rd.
St Louis, MO 63132

Bessey, Palmer Q GS
4960 Audubon Ave.
St. Louis, MO 63110
314-362-5297

Best, John A IM
224 S Woods Mill Rd 310-N
Chesterfield, MO 63017
314-576-6700

Bettonville, Paul J IM
324 Quan
St. Louis, MO 63122

Bettonville, Peter V IM
135 West Adams
St. Louis, MO 63122
314-965-8031

Bhattacharya, Arjun GS
7200 Manchester Rd
St Louis, MO 63143
314-645-7744

Bialecki, Leon IM
11133 Dunn Rd. #216
St. Louis, MO 63136
314-355-2300

Biddy, Ralph L P
965 Masonridge Rd
St Louis, MO 63141
314-567-5185

Biel, Stanley I CD
12255 DePaul Dr. Suite 865
Bridgeton, MO 63044
314-291-7730

Biggs, F. Douglas IM
950 Francis Pl. #250
St. Louis, MO 63105
314-863-0009

Biggs, John P
1034 So Brentwood
Suite
St Louis, MO 63117
314-863-2244

Bilchik, Ronald C OPH
222 S. Woods Mill Rd. #660
Chesterfield, MO 63017
314-878-9902

Billy, Lawrence J GS
11115 New Halls Ferry #303
Florissant, MO 63033
314-838-5600

Bindbeutel, Donald A GS
1035 Bellevue Ave. #300
St Louis, MO 63117
314-647-0825

---

*Doctor of osteopathy.

Binnington, H B GS
621 S New Ballas Rd #307
St Louis, MO 63141
314-567-6666

Bircher, John L R
508 Susan Road
St. Louis, MO 63129
314-525-1155

Bird, H. Waldo P
62 Conway Lane
St Louis, MO 63124
314-997-7012

Birenbaum, Aaron IM
10511 Old Olive St Rd
St Louis, MO 63141
314-993-2660

Birge, Clifford A IM
12 Ridgetop Drive
Richmond Hghts, MO 63117
314-275-8600

Bishop, Marion D GS
1132 Birchgate Tr.
St. Louis, MO 63135

Black, Joseph T N
One Barnes Hospital Plaza
Suite 16304
St Louis, MO 63110
314-367-3122

Blackwell, Charles R AN
47 Pricewoods Lane
St. Louis, MO 63132
314-567-5884

Blair, Olga M PTH
5 Huntleigh Manor
St Louis, MO 63131
314-664-9800

Blair, Vilray P ORS
One Barnes Hospital Plaza
St. Louis, MO 63110
314-362-4080

Blanke, Thomas J GS
621 S New Ballas Rd #362
St. Louis, MO 63141
314-569-0227

Blaskiewicz, Robert J OBG
2821 N. Ballas Rd. #165
St. Louis, MO 63131
314-872-7400

Blath, Richard A U
224 S. Woods Mill Rd.
Suite 510
Chesterfield, MO 63017
314-434-3433

Block, Arnold S P
4501 Lindell Blvd.
St Louis, MO 63108
314-361-8381

Bloom, Jeffrey N OPH
Cardinal Glennon RM 534GH
1465 S. Grand Blvd.
St. Louis, MO 63104
314-577-5660

Bloomberg, Gordon R PD
777 S. New Ballas Rd. #106E
St. Louis, MO 63141
314-872-8262

Blum, Donald A
40 North Florissant Rd.
St. Louis, MO 63135
314-521-1302

Blumenthal, Mark F GS
12255 DePaul Dr. Suite 150
Bridgeton, MO 63044
314-298-8844

Blythe, James G OBG
621 S New Ballas Rd #2009
St Louis, MO 63141
314-569-6880

Bobrow, James C OPH
211 North Meramec
St Louis, MO 63105
314-721-1140

Bock, Linda P PD
621 S. New Ballas Rd.
Chesterfield, MO 63141
314-432-7343

Boedeker, James P OBG
1035 Bellevue Ave Ste S-314
St. Louis, MO 63117
314-647-8300

Bohigian, George M OPH
450 N. New Ballas Rd. #201
St. Louis, MO 63141
314-569-1155

Boldizar, Albert G OPH
1048 S McKnight Rd.
St Louis, MO 63117

Boldt, Thomas H IM
3394 McKelvey Rd. #107
Bridgeton, MO 63044
314-739-5070

Boles, C R PD
35 N Central Ave
St. Louis, MO 63105
314-725-9100

Bolinske, Robt E A
11722 Studt Ave
St Louis, MO 63141
314-569-0510

Bollozos, George D PTH
3933 S Broadway
St Louis, MO 63118
314-865-3333

Bonacorsi, John OTO
12255 DePaul Dr. #765
Bridgeton, MO 63044
314-291-5307

Bonfanti, Albert L OBG
109 Northland Office Bldg.
St Louis, MO 63136
314-381-5557

Bonfili, Hubert F AM
143 Pebble Acres
St. Louis, MO 63141
314-645-7744

Boniuk, Isaac OPH
One Barnes Hospital Plaza
#17413
St. Louis, MO 63110
314-367-1181

Bonsanti, Robt L IM
3394 McKelvey Rd.
Bridgeton, MO 63044
314-291-3410

Boonshaft, Benje IM
10511 Old Olive St Rd
St Louis, MO 63141
314-993-2660

Borowsky, Benj A IM
4910 Forest Park #312
St Louis, MO 63108
314-367-2757

Bortnick, Arthur R OBG
520 Midvale
St Louis, MO 63130

Borts, Michael R IM
7167 Princeton
St. Louis, MO 63130
314-723-7333

Bouhasin, John D PD
3720 Hampton #102
St Louis, MO 63109
314-351-8484

Bourjolly, Wilson P OPH
900 N Highway 67
Florissant, MO 63031
314-838-0300

Bourke, Thos E IM
3394 McKelvey Rd.
Bridgeton, MO 63044
314-739-5070

Boveri, Jos C OBG
1862 Point Oak
St Louis, MO 63131
314-821-2004

Bowdern, Edward H GS
4440 Lindell
Apt. 1102
St Louis, MO 63108

Bowe, Christopher C IM
9701 Landmark Parkway Dr.
Suite 210
St. Louis, MO 63127
314-842-5211

Bowen, Stephen F OPH
16 Hampton Village Plz
St Louis, MO 63109
314-351-5330

Bowen, William G IM
4652 Maryland Ave.
St. Louis, MO 63108
314-367-3113

Bower, Richard GS
400 S. Kingshighway Ste SW12
St Louis, MO 63110
314-454-6022

Bowerman, Harold H OTO
705 S. Laclede Station #253
St. Louis, MO 63119

Bowers, James E PD
533 Couch Avenue
St. Louis, MO 63122
314-966-0252

Bowersox, Warren A GS
P. O. Box 36
Pacific, MO 63069

Bowles, G R IM
12166 Old Big Bend
St Louis, MO 63122
314-821-9150

Bowles, Wm T U
One Barnes Hosp Plaza 17301
St Louis, MO 63110
314-361-2052

Boyarsky, Saul U
45 Portland Place
St. Louis, MO 63108
314-361-7780

Boyd, Craig W OBG
1245 Graham Rd. Suite 408
Florissant, MO 63031
314-838-1300

Brabbee, Gregory W GS
621 S. New Ballas Rd.
St. Louis, MO 63141
314-567-9930

Bradley, Richard V GS
7517 Wellinston Way
St. Louis, MO 63105
314-965-1003

Brady, Harry R OPH
2821 N. Ballas Rd. #240
St Louis, MO 63131
314-432-6137

Brady, Timothy T IM
1400 Lemay Ferry Rd. #101
St. Louis, MO 63125
314-544-5005

Brancato, Donald H ORS
11155 Dunn Rd. #102N
St Louis, MO 63136
314-355-7717

Brandwin, Leslie M IM
4910 Forest Park Blvd.#312
St. Louis, MO 63108
314-367-2757

Brangle, Robt W PTH
6150 Oakland Ave.
St Louis, MO 63139
314-432-1850

Bremer, Rita F IM
3024 Orton St
St Charles, MO 63301

Brennan, Danl J PS
621 S. New Ballas Rd.
Suite 1003
St Louis, MO 63141
314-567-3737

Brennan, Geo A OBG
10004 Kennerly Rd. #205
St. Louis, MO 63128
314-726-2205

Brennan, Robert A OBG
12810 Tesson Ferry Rd.
St. Louis, MO 63128
314-849-3711

Brennan, Robt A OBG
6030 Highfield
St. Louis, MO 63109
314-843-0886

Brennan, Robt V U
533 Couch Ave. G-55
St. Louis, MO 63122
314-966-4862

Brewer, John R PD
2600 Hadley St.
St. Louis, MO 63106
314-241-2200

Bricker, Eugene M GS
43 Highgate Rd
St. Louis, MO 63132

Brigham, David W OPH
14615 Manchester
Ballwin, MO 63011
314-391-0233

Brinkman, Robert A IM
522 N. New Ballas #349
St. Louis, MO 63141
314-567-3113

Brodeur, Armand E R
1501 S. Grand Blvd.
St. Louis, MO 63104
314-577-5605

Brody, Arnold G FP
6500 Chippewa Suite 125
St. Louis, MO 63109
314-481-5656

Bronson, Shael S P
777 S New Ballas Rd
St Louis, MO 63141
314-872-8869

Brookes, Robt D P
224 So Woods Mill Rd.
Suite 360
Chesterfield, MO 63017
314-878-7048

Broun, Goronwy O IM
St. Louis Univ Med Ctr
3635 Vista Ave.
St. Louis, MO 63110
314-577-8854

Brown, Barry D IM
6125 Clayton Suite 412
St. Louis, MO 63139
314-645-8911

Brown, Freeman F AN
218 Hollyberry Ct
Ballwin, MO 63021
314-434-1500

Brown, Seymour AN
2421 Baxton Way
Chesterfield, MO 63017
314-227-5223

Bruce, Helen L PH
3438 Russell Blvd. Apt 301
St Louis, MO 63104

---

*Doctor of osteopathy.

Bruns, Kenneth AN
3635 Vista at Grand
P.O. Box 15250
St. Louis, MO 63110
314-577-8750

Brunt, L. Michael GS
Jewish Hospital of St. Louis
216 S. Kingshighway
St. Louis, MO 63110
314-454-7194

Bucholz, Richard D NS
3635 Vista Ave. at Grand
P. O. Box 15250
St. Louis, MO 63110
314-577-8797

Bucy, James G U
One Barnes Hosp Plaza
Suite 17302W
St Louis, MO 63110
314-361-4880

Budd, John J IM
9012 Manchester Rd
St Louis, MO 63144
314-962-2170

Budd, John J IM
9012 Manchester
St. Louis, MO 63144
314-962-2170

Buettner, John Brigham GS
222 South Woods Mill #300N
Chesterfield, MO 63017
314-362-7272

Burdge, Robert E ORS
St. Louis Univ Hosp.
3635 Vista Ave.
St. Louis, MO 63110
314-577-8850

Burgdorf, Max H PD
12303 DePaul Dr.
Bridgeton, MO 63044
314-344-6000

Burgess, Dean OPH
One Barnes Hosp Plaza 17413
St Louis, MO 63110
314-367-1181

Burke, Robt J PD
16 Hampton Village Plaza
St Louis, MO 63109
314-832-2877

Burkhart, Edward F D
709 So Skinker #301
St. Louis, MO 63105
314-567-5711

Burmeister, R. William IM
12818 Tesson Ferry Road
Suite 101
St. Louis, MO 63128
314-849-2277

Burns, Edward L IM
9701 Landmark Parkway Dr.
Suite 210
St. Louis, MO 63127
314-842-5211

Burns, Francis J CRS
7801 Kingsbury Blvd.
St. Louis, MO 63105

Burns, Michael F ORS
1035 Bellevue Ave. #102
St. Louis, MO 63117
314-645-4600

Burris, Garrett C PD
777 S. New Ballas
Suite 330E
St. Louis, MO 63141
314-991-1018

Burst, Donald O ORS
61 Trent Dr.
St. Louis, MO 63124

Burstein, Robert OBG
911 S Brentwood Blvd #325
St. Louis, MO 63105
314-721-8852

Busch, Anthony K P
6600 W. Main St.
Belleville, IL 62223
618-397-4466

Busse, Paul P R
1155 Rue La Chelle
St. Louis, MO 63141

Bussmann, Carl E GS
12255 DePaul #800
Bridgeton, MO 63044
314-291-2250

Bussmann, Donald W CD
746 Fairfield Lake Drive
Chesterfield, MO 63017

Butsch, Richard H IM
335 Mid Rivers Dr.
St. Peters, MO 63376
314-278-5003

Byrne, Robert M IM
12255 DePaul Dr. #345
Bridgeton, MO 63044
314-739-4166

Byrum, Fritz A FP
15360 Manchester
Ballwin, MO 63011
314-256-0061

Cabal, Edito R
11701 Lakeshore Dr.
St. Louis, MO 63141
618-798-3181

Cabal, Maria PD
818 Martin Lutheran King Dr.
E. St. Louis, IL 62201
618-875-7800

Cabbabe, Edmond B PS
10004 Kennerly Rd. #200
St. Louis, MO 63128
314-842-5885

Cabral, Galileu IM
3009 N. Ballas Rd. Suite 304
St. Louis, MO 63131
314-432-0350

Caciolo, Carlo P IM
6651 Chippewa St.
St. Louis, MO 63109
314-644-4411

Cacioppo, Jos E GP
1040 N Mason Rd #101
St Louis, MO 63141
314-878-5000

Cadice, John B OBG
1245 Graham Rd #408
Florissant, MO 63031
314-838-1300

Cajili, Antonio T IM
300 S Grand
St Louis, MO 63103
314-658-5647

Calcaterra, Curt E IM
10004 Kennerly Rd. #315
St. Louis, MO 63128
314-843-7333

Callaghan, Gerard M OBG
1035 Bellevue #510
St Louis, MO 63117
314-644-4460

Callahan, Donald E R
719 Champeix Lane
St Louis, MO 63141

Callahan, Jos D CHP
111 S. Bemiston
St Louis, MO 63105
314-725-7371

Calodney, Martin M PD
8730 Teasdale Ave.
St. Louis, MO 63124

Campbell, J. William IM
114 N. Taylor Ave.
St. Louis, MO 63108
314-534-8600

Campos, Francisco J PTH
325 Carlyle Lake Drive
St. Louis, MO 63141

Canaan, Samuel A OPH
5535 Delmar Blvd.
St Louis, MO 63112
314-367-7077

Cantor, Harvey E N
555 N. New Ballas Rd. #100
St Louis, MO 63141
314-569-0720

***Cantor, Sol F** FP
4600 S. Lindbergh
St. Louis, MO 63127
314-843-3636

Caplin, David A PS
675 Old Ballas Rd. #200
St. Louis, MO 63141
314-569-0130

Carden, Juan O IM
11155 Dunn Rd. #213
St. Louis, MO 63136
314-355-8200

Carlin, M. Richard U
8 Winding Brook Lane
St. Louis, MO 63124

Carls, Garry L R
818 Upper Cahokia Rd.
Cahokia, IL 62206
618-337-4190

Carlson, Arne E GS
89 Pebblebrook Lane
Creve Coeur, MO 63146

Carmody, John P IM
10004 Kennerly Rd. #386B
St. Louis, MO 63128
314-843-2151

Caronongan, Carmelito M GS
2304 Holbrook
Cairo, IL 62914

Carranza, Mauro J FP
P O Box 10817
St. Louis, MO 63128
314-789-3313

Carrier, John A IM
893 Club House Drive
Ballwin, MO 63011

Carter, Edwin E ORS
621 S. New Ballas Rd.
St. Louis, MO 63141
314-567-5850

Cary, John M IM
224 South Woods Mill Rd.
Chesterfield, MO 63017
314-878-2460

Case, Mary E PTH
3556 Caroline
St. Louis, MO 63104
314-577-8298

Casey, Edwin J OPH
4466 W Pine
St Louis, MO 63108

Casey, Arthur L OBG
3535 S. Jefferson
St. Louis, MO 63118
314-773-2003

Casey, Eliot C PD
621 S New Ballas #2003
St Louis, MO 63141
314-569-6150

Cason, Elbert H GS
287 Ladue Lake Dr.
St. Louis, MO 63141
314-436-5100

Castaneda, Marco A GS
12255 DePaul Dr. Suite 670
Bridgeton, MO 63044
314-298-9602

Castasus, Manuel A GS
600 N Union Blvd
St Louis, MO 63108
314-367-1828

Catanzaro, Anthony F FP
2705 Clifton Ave
St Louis, MO 63139
314-645-2517

Catanzaro, Frank J OPH
3009 N. Ballas Rd. #205
St. Louis, MO 63131
314-997-3210

Catanzaro, Frank J CD
1688 Frontenac Woods Lane
St Louis, MO 63131
314-569-5160

Catanzaro, Rudolph E GS
8131 Page Blvd
St Louis, MO 63130
314-429-5589

Chadaratana, Phadung OTO
4121 Union Rd #216
St Louis, MO 63129
314-487-9717

Chamness, James T PS
590 Harbour Rd.
Vero Beach, FL 32963

Chanasue, John A IM
11115 New Halls Ferry Rd.102
Florissant, MO 63033
314-839-4466

Charles, Benj H IM
1 McKnight Pl #239
St. Louis, MO 63124

Charles, Francois CD
600 N Union
St Louis, MO 63108
314-367-1828

Charnas, Raymond M IM
22 Briarcliff
St. Louis, MO 63124

Chavez, Salvador GS
5048 Peyton Place
St. Louis, MO 63128
314-938-6663

Chehval, Micheal J U
621 S. New Ballas Rd. #362
St Louis, MO 63141
314-991-2626

Chen, James Z.W. TR
6420 Clayton Rd.
Chesterfield, MO 63017
314-768-8267

Cherre, Charles J R
14316 E. Conway Meadows #208
Chesterfield, MO 63017

Cheuk, Shu-Sum GS
224 S. Woods Mill Rd.
Suite 430
Chesterfield, MO 63017
314-576-0060

Chinsky, Murray IM
500 Northwest Plaza #501
St. Ann, MO 63074
314-291-6400

Chipongian, Raul A OPH
10004 Kennerly Rd.
St. Louis, MO 63128
314-849-1001

Chirino, Octavio R OBG
9701 Landmark Parkway Dr 207
St. Louis, MO 63127
314-842-4802

Chishti, M. Ishaq OPH
6651 Chippewa
St. Louis, MO 63109
314-781-3900

---

*Doctor of osteopathy.

Chiu, Tai Mao AN
6400 Clayton Rd.
St. Louis, MO 63117
314-768-8300

Cho, Kyu S ORS
456 N New Ballas
Suite 369
St Louis, MO 63141
314-569-1830

Chod, Ronald J OBG
777 S. New Ballas Rd. #100E
St. Louis, MO 63141
314-567-7303

Chou, Yen Ping IM
2777 Ashfield
St. Louis, MO 63129

Chu, Fred C OPH
224 S. Woods Mill Rd.
Suite 480 South
Chesterfield, MO 63017
314-542-0700

Chua, Steven IM
1125 Graham Road
Florissant, MO 63031
314-838-5700

Chun, Duck S CD
533 Couch Ave. #174
St. Louis, MO 63122
314-965-9980

Ciapciak, Stanley J FP
506 Middleton Ct.
St. Louis, MO 63122

Claseman, Wilma W PH
3237 Longfellow Blvd
St Louis, MO 63104

Claycomb, Gerald K DR
14 Crown Manor Lane
Chesterfield, MO 63005
314-567-1644

Cloninger, C. Robert P
4949 Audubon Ave.
St. Louis, MO 63110
314-362-7005

Coates, James G IM
4444 Forest Park
P.O.Box 66828
St. Louis, MO 63166
314-289-6205

Cobb, Milton L AN
1425 Forest Ave.
St Louis, MO 63122
314-525-1953

Coben, Lawrence A N
660 S Euclid Box 8111
St Louis, MO 63110
314-362-7171

Cohen, Bruce H OPH
One Barnes Hospital Plaza
Suite 17423
St. Louis, MO 63110
314-361-5003

Cohen, Edward R
17 Vouga Lane
St. Louis, MO 63131
314-454-7230

Cohen, Frank IM
3130 Autumn Shores Dr.
Bridgeton, MO 63044

Cohen, Hillard K IM
500 Northwest Plaza #417
St Ann, MO 63074
314-729-9313

Cohen, Robert S OBG
675 Old Ballas Rd. Suite 100
St. Louis, MO 63141
314-872-9206

Coin, Richard E PS
621 S. New Ballas Rd.
St. Louis, MO 63141
314-567-3737

Cokrhame, Jack IM
1125 Graham Rd
Florissant, MO 63031
314-838-5700

Colbert, Dennis G IM
4061 Lindell
St. Louis, MO 63108
314-531-4488

Cole, F. Sessions
Childrens Hospital
400 S. Kingshighway
Clayton, MO 63110
314-454-6148

Cole, Harry O NS
224 South Woods Mill Rd.
Suite 610
Chesterfield, MO 63017
314-878-2888

Comas, Manuel R OBG
1402 S. Grand Blvd.
St. Louis, MO 63104
314-577-8205

Comens, Ruth C AN
8826 Woodfox
St Louis, MO 63127
314-842-2111

Conner, Patrick R IM
800 N. Lindbergh
Creve Coeur, MO 63167
314-694-8807

Connors, John P TS
3015 N. Ballas Rd.
St Louis, MO 63131
314-569-5287

Connors, Robert H PDS
1465 S. Grand Blvd.
St. Louis, MO 63104
314-577-5629

Conrad, Marshall B ORS
522 N. New Ballas Rd. #113
St. Louis, MO 63141
314-997-7073

Conway, Philip G IM
903 N. Taylor Ave.
St. Louis, MO 63122
314-426-5161

Cook, Marvin R
5 Portland Drive
St Louis, MO 63131
314-525-1155

Cooksey, Jon D CD
3009 N. Ballas Ste. 310
St. Louis, MO 63131
314-567-3023

Cooper, Barry J A
10004 Kennerly Rd.
St. Louis, MO 63128
314-842-5252

Cooper, James F GS
12255 DePaul Dr
Bridgeton, MO 63044
314-291-8130

Cooper, Theodore CD
7000 Portage Rd.
Kalamazoo, MI 49001
616-323-7094

Cooper, Thomas J PTH
13050 Woodley Lane
St. Louis, MO 63128

Coordes, Cordie C TS
222 S. Woods Mill Rd. #550
Chesterfield, MO 63017
314-434-3049

Copp, Ralph IM
One Barnes Hosp Plz #5107
St. Louis, MO 63110
314-361-0300

Corday, Robt J P
141 N. Meramec Suite 205
St. Louis, MO 63105
314-725-0422

Corder, James C IM
911 S. Brentwood Blvd.
St. Louis, MO 63105
314-862-5252

Coronado, Mario A OBG
10004 Kennerly Rd #350
St Louis, MO 63128
314-842-5583

Corriveau, Michael L IM
12818 Tesson Ferry Rd. #101
St. Louis, MO 63128
314-849-2277

Corvalan, Juan C P
10004 Kennerly Rd. #250
St Louis, MO 63128
314-849-3112

Corwin, Kenneth D PS
77 Westport Plaza #350
St. Louis, MO 63146
314-576-1911

Costello, Jos P IM
15145 Baxtor Court
Chesterfield, MO 63017
314-726-3157

Costen, William S ORS
224 S. Woods Mill Rd.
Suite 330
Chesterfield, MO 63017
314-576-7013

Covert, Richard A FP
1218 Du Motier
Ballwin, MO 63011
314-726-4668

Cox, James L TS
One Barnes Hosp Plaza #3108
St. Louis, MO 63110
314-362-6185

Coxe, Wm S NS
Box 8057 660 S. Euclid
St Louis, MO 63110
314-362-3576

Coyne, Patrick M OBG
1245 Graham Rd.#408
Florissant, MO 63031
314-838-1300

Cradock, Thomas V PDS
1401 South Grand
St Louis, MO 63104
314-776-7700

Crafts, David NS
3635 Vista Ave. at Grand
P.O.Box 15250
St. Louis, MO 63110
314-577-8798

Craig, Alan G P
200 S. Sappington
St. Louis, MO 63122

Crandall, Richard E PS
1585 Woodlake Drive #206
Chesterfield, MO 63017
314-878-6300

Craver, Jeffrey L PTH
12303 DePaul Dr.
Bridgeton, MO 63044
314-344-7528

Crawford, Katherine J GS
112 Walnut Drive
Carrollton, MO 64633

Crepps, Louis F R
13302 Treetop View Ct.
St. Louis, MO 63141
314-569-6031

Crespin, Stephen R IM
777 S. New Ballas Rd.
St Louis, MO 63141
314-432-1128

Criscione, James R TS
6500 Chippewa #203
St. Louis, MO 63109
314-353-1118

Criscione, James R EM
6500 Landsdowne
St. Louis, MO 63109
314-352-7033

Criscione, James S AN
1837 Grassy Ridge
St. Louis, MO 63122
314-965-7000

Crotty, John P TR
818 Upper Cahokia Rd
Cahokia, IL 62206
618-337-4190

Croughan, Jack L P
1034 S. Brentwood #970
St. Louis, MO 63117
314-725-4004

Crumpacker, Margaret P
141 N Meramec Oxford Bldg 23
St. Louis, MO 63105
314-725-1962

Cruz, Eligio C OBG
224 South Woods Mill Rd.
Suite 450
Chesterfield, MO 63017
314-434-2454

Cubillo, Enrique DR
229 S. Woods Mill Rd.
Chesterfield, MO 63017
314-434-1500

Cuddihee, Robert E IM
621 S. New Ballas Rd.
St. Louis, MO 63141
314-569-6344

Cuento, Oblendo A GS
2425 N. Broadway
St. Louis, MO 63102
314-241-4455

Cunningham, Edwin J IM
1585 Woodlake Dr. #108
Chesterfield, MO 63017
314-434-3322

Custer, Philip L OPH
One Barnes Hosp Plaza #17423
St. Louis, MO 63110
314-361-2698

Cusumano, Joseph V US
6319 Alexander Drive
St. Louis, MO 63105
314-768-3061

Cutler, Harold M OTO
816 S. Hanley Apt. 4B
St. Louis, MO 63105

Czebrinski, Edward W IM
#10 Fordyce Manor
St. Louis, MO 63131

Daake, John W GS
48 Portland Pl
St Louis, MO 63108

Daake, John W GS
10004 Kennerly
St. Louis, MO 63128
314-843-1557

Dacey, Ralph G NS
One Barnes Hosp Plz Neurosur
St. Louis, MO 63110
314-362-3571

Dagartzikas, A K OBG
12902 Tundra
St. Louis, MO 63131
314-838-1700

Dahm, Chas H OBG
6125 Clayton Road
St. Louis, MO 63139
314-768-3220

•Doctor of osteopathy.

Dalton, Arthur R GS
13129 Conway Road
St. Louis, MO 63141
314-991-4567

Dames, Richard J IM
15 York Dr.
St. Louis, MO 63144
314-962-2170

Danforth, Wm H IM
10 Glenview
St. Louis, MO 63124

Dang, Phung T
12777 Castleban Dr.
St. Louis, MO 63146
314-355-2300

Danis, Richard K PDS
1401 S Grand
St Louis, MO 63104
314-776-7700

Dankner, Arnold IM
1570 Woodlake Dr.
Chesterfield, MO 63017
314-878-0996

Dankner, Rand E A
1570 Woodlake Dr.
Chesterfield, MO 63017
314-878-0996

Dash, Udaya N ORS
50 Daupine Drive
Lake St. Louis, MO 63367

Davidson, Morris OTO
P.O. Box 30025
St. Louis, MO 63119

Davidson, Raymond P OBG
4444 Forest Pk Blvd RM 697
St. Louis, MO 63108
314-289-6295

Davis, Gene L DR
3009 N. Ballas Ste. 131
St Louis, MO 63131
314-432-3770

Davis, Mary A P
456 N New Ballas Rd
St Louis, MO 63141
314-567-5707

Davis, Sheldon OTO
253 Dunn Rd.
Florissant, MO 63031
314-921-7770

Deane, Louis V IM
621 S. New Ballas Rd. #3005
St. Louis, MO 63141
314-569-6168

DeBoard, James W AN
St. Louis Univ Hosp
3635 Vista Ave.
St. Louis, MO 63110
314-577-8750

Deeths, Tony M DR
135 Laduemont Dr
St. Louis, MO 63141
314-567-4350

DeGuerre, Ronald K U
224 S. Woods Mill Rd. #510
Chesterfield, MO 63107
314-434-3433

Dehner, Louis P PTH
Barnes Hosp Anatomic Pth
One Barnes Hosp Plaza
St. Louis, MO 63110
314-362-0150

Dehner, Jonathan D R
26 Lorenzo Lane
St. Louis, MO 63124
314-727-0012

Del Rosario, Horacio O OM
966 Cabernet Dr.
Chesterfield, MO 63017
314-327-2154

Del Valle, Fernando P
777 S New Ballas Ste W
St Louis, MO 63141
314-569-0811

DeMarchena, Octavio N
One Barnes Hosp Plaza #16304
St. Louis, MO 63110
314-367-3122

Denes, Bela U
12255 DePaul Dr.
Bridgeton, MO 63044
314-344-9970

Denk, Alan F GS
1035 Bellevue
St. Louis, MO 63117
314-644-6300

Deshpande, V IM
1814 Elmsford Lane
Chesterfield, MO 63005
314-963-1745

DeSilva, Ananda PD
1245 Graham Rd.
Suite 503
Florissant, MO 63031
314-838-1166

DeUngria, Pablo C OBG
6400 Clayton Road #402
St Louis, MO 63117
314-644-6633

Deutch, Max PD
200 S. Brentwood Blvd #8A
St. Louis, MO 63105

Devabhaktuni, Rama Devi FP
327 Royal Village Dr.
Manchester, MO 63011
314-481-7030

DeVera, Anson E AN
5085 Reynosa Dr
St Louis, MO 63128

Devine, John B PUD
85 Willmore Rd
St Louis, MO 63109

Devineni, V. Rao R
4939 Audubon Suite 5500
St. Louis, MO 63110
314-362-8503

Dew, Thomas A PUD
224 S. Woods Mill
Chesterfield, MO 63017
314-576-6700

Dewald, Paul A P
4524 Forest Park Blvd #200
St Louis, MO 63108
314-367-5817

Dewein, Edward G P
621 S New Ballas Rd
St Louis, MO 63141
314-567-9871

Diaz, Christiana M N
11155 Dunn Rd. Suite 202N
St. Louis, MO 63136
314-355-3355

DiCecco, Charles J IM
1905 Falling Tree Ct.
Chesterfield, MO 63005
314-831-6304

Dickler, Donald J AN
833 Audubon Dr
St. Louis, MO 63105

Diehl, Elizabeth W PD
533 Couch Ave. #120
St. Louis, MO 63122
314-966-3324

Diemer, Peter A R
12302 Ironstone Road
St. Louis, MO 63131
314-291-0340

Diestelhorst, James A IM
3009 N. Ballas Rd. Suite 304
St. Louis, MO 63131
314-432-0350

Dillard, Burl M GS
533 Couch Ave. #G90
St. Louis, MO 63122
314-821-1883

Dilworth, Jacquelyn B D
1035 Chartres Ave.
St. Louis, MO 63132
314-355-7111

DiPasco, Donald J IM
533 Couch Ave. Suite 255
St Louis, MO 63122
314-822-9400

Dmytryk, Eugene T GS
303 W. Jackson Rd.
St. Louis, MO 63119

Dodge, Philip R CHN
410 N. Newstead
St Louis, MO 63108
314-454-2699

Doerr, Dale E ORS
3533 S. Jefferson Suite 317
St. Louis, MO 63118
314-664-8600

Doisy, Philip P IM
9383 Pine Ave.
St. Louis, MO 63144

Doisy, Robert A IM
103 Edwin
St. Louis, MO 63122

Dolan, Patrick H AN
947 Town & Country Estates
St. Louis, MO 63141
314-872-8221

Dolan, Renee C IM
947 Town & Country Estates
Town & Country, MO 63141

Donahoe, James L PD
37 West Brentmoor
Clayton, MO 63105

Donati, Robert M NM
1402 S. Grand
St. Louis, MO 63104
314-577-8210

Donley, Leo F GS
2425 N Broadway
St Louis, MO 63102
314-241-4455

Donovan, John F GS
10007 Kennerly Rd.
St Louis, MO 63128
314-849-2727

Donovan, Thomas J OTO
621 S. New Ballas Rd. #7008
St Louis, MO 63141
314-997-4430

Dooley, Joseph M N
222 So. Woods Mill Rd.
Chesterfield, MO 63017
314-878-1930

Dorton, Robt K IM
911 S Brentwood Blvd #220
St Louis, MO 63105
314-862-5252

Dowell, Geo H P
3009 N Ballas Rd.
Suite #110
St Louis, MO 63131
314-567-5000

Doyle, Chas R GS
9053 Monmouth Dr.
St Louis, MO 63117

Drake, William L PTH
537 Lee Ave.
St Louis, MO 63119

Drescher, Emmett B GS
619 Haverford Rd.
St. Louis, MO 63124

Drews, Robt C OPH
211 N Meramec #204
St Louis, MO 63105
314-721-0854

Dreyer, Carl J OBG
45 Glen Road
St. Louis, MO 63119

Drozda, Joseph P CD
12255 Depaul Dr. #460
Bridgeton, MO 63044
314-291-8824

Druck, Norman S OTO
222 S. Woodsmill Rd Ste 610N
Chesterfield, MO 63017
314-434-1400

Duemler, Robt H OBG
12166 Old Big Bend Blvd #100
St. Louis, MO 63122
314-821-3500

Duffy, Francis G AN
8116 University Dr
St. Louis, MO 63105
314-434-1500

Duggan, John J OBG
c/o Mr. George Duggan
31 Quail Wood Drive
Fenton, MO 63026

Dugger, David E OBG
11132 S. Towne Square #104
St. Louis, MO 63123
314-894-6700

Dumadag, Virgilio P PTH
3015 N Ballas Rd
St Louis, MO 63131
314-432-1212

DuMontier, Alan J FP
16826 Kehrsbrooke
Chesterfield, MO 63005
314-227-2606

Dunn, Robert C NS
621 S. New Ballas Rd.
St. Louis, MO 63141
314-569-3620

Durbin, Patrick H IM
30 Willow Drive
Fairview Hghts, IL 62208
618-398-6106

Durel, Justin H OBG
2821 N. Ballas Rd.
St. Louis, MO 63131
314-872-7400

Durr, Jon W PTH
11220 W. Florisant Suite 109
Florissant, MO 63033
314-355-2300

Dusek, Dennis A ORS
1745 Topping Rd.
St. Louis, MO 63131
314-849-0311

Dwyer, James G IM
533 Couch Ave Suite 174
St. Louis, MO 63122
314-965-9980

Dwyer, Joseph C IM
13603 Barrett Office Dr.
Ballwin, MO 63021
314-966-3536

Dyer, Dallas J IM
5309 Cardinal Ridge Circle
St. Louis, MO 63119

Dzundzev, Penco T FP
16 Hampton Village Plaza
St Louis, MO 63109
314-832-2191

Eachempati, Rama G NM
Box 6 2nd General Hospital
Landstuhl Army Reg Ctr
A.P.O., NY 09180

Eachempati, Uma R OBG
4150 Jeffco Blvd.
Arnold, MO 63010
314-464-0303

---

*Doctor of osteopathy.

Eades, Joseph W PS
4910 Forest Park #314
St. Louis, MO 63108
314-367-5012

Ebel, James E IM
4107 Union Rd.
St. Louis, MO 63129
314-894-5575

Eberle, Vincent L OBG
2821 N. Ballas Rd. #105
St Louis, MO 63131
314-432-1680

Eck, Birkle IM
950 Francis Place #211
St Louis, MO 63105
314-726-2828

Ecker, Desider B FP
222 Glenellen
Sun City, FL 33570

Eckert, Clarence T GS
2295 Gulf Of Mexico Dr
Apt. 82 - South
Longboat Key, FL 34228

Edele, Eugene H FP
3890 Federer Pl
St Louis, MO 63116
314-352-3770

Edelman, Alan H DR
3009 N. Ballas Ste. 131
St. Louis, MO 63131
314-432-3770

Edwards, Jos C IM
610 W. Polo Drive
Clayton, MO 63105

Edwards, James E CHP
Psychiatric Ctr/Creve Coeur
12520 Olive Blvd.
St. Louis, 63141
314-576-6692

Egan, Robert C GS
1034 S. Brentwood Blvd. #776
St. Louis, MO 63117
314-863-6006

Egan, Thos F R
9852 Northbridge
St Louis, MO 63124
314-434-1500

Eggleston, Harry C OPH
621 S New Ballas Rd #228
St Louis, MO 63141
314-872-7744

Eggleston, Thomas F OPH
621 S New Ballas
St Louis, MO 63141
314-569-2020

Ehrlich, Carl F OTO
3009 N Ballas Rd. #212
St. Louis, MO 63131
314-567-6533

Eidelman, Jack R P
141 N Meramec
St Louis, MO 63105
314-862-0555

Eisen, Arthur Z D
Wash Univ Div of Derm #8123
660 S. Euclid Ave.
St. Louis, MO 63110
314-362-8180

Ekunno, Josiah O OBG
4651 Natural Bridge Box 5340
St. Louis, MO 63115
314-385-9904

Elcock-Skimming, Devera M FP
16244 Berry View Ct.
Ballwin, MO 63011
314-569-6092

Eliasson, Sven G N
660 S Euclid
St Louis, MO 63110
314-362-3296

Eller, Chas H PH
250 E Alameda #515
Santa Fe, NM 87501

Ellersieck, Dorothy M FP
11160 Village North Dr.
Apt Oakwood 117
St Louis, MO 63136

Emanuel, James P ORS
675 Old Dallas Rd. #200
St. Louis, MO 63141
314-569-0130

Emeran, George J U
2715 N. Union
St. Louis, MO 63113
314-261-3300

Emons, Matthew F IM
2900 Lemay Ferry Rd. Ste 225
St. Louis, MO 63125
314-894-9310

Engelberg, Alan L OM
Monsanto Co A3NB
800 N. Lindbergh Blvd
St. Louis, MO 63167
314-694-8896

Ernst, Edwin C R
8 Coach-N-Four
St. Louis, MO 63131

Ernst, Roland P R
919 Devereaux
St. Louis, MO 63131

Ernst, Edwin C DR
12457 Balwyck
St. Louis, MO 63131
314-344-6350

Ernst, Joseph G IM
325 North Kirkwood
St. Louis, MO 63122
314-965-7265

Ernst, Richard E R
23 Villa Coublay
St. Louis, MO 63131
314-344-6350

Escoffery, Richard F OPH
1245 Graham Rd. Suite 107
Florissant, MO 63031
314-839-1211

Esslinger, Arthur T OBG
1762 Bay St. Apt 303
Sarasota, FL 34236

Esther, James H IM
3009 N Ballas Suite 100
St. Louis, MO 63131
314-432-1111

Eto, Jackson K PD
41 Lake Forest
St. Louis, MO 63117

Ettelson, Charles D PS
222 S Woods Mill Rd. #700-N
Chesterfield, MO 63017
314-878-7770

Evans, Lawrence G ORS
950 Francis Place #14
St Louis, MO 63105
314-862-2012

Evens, Ronald G R
510 S Kingshighway
St Louis, MO 63110
314-362-7100

Eversoll, Norton J OS
3301 Water Oaks Drive
Hollywood, FL 33021

Exarhou, Klark GS
3009 N. Ballas Rd. #206
St Louis, MO 63131
314-569-3838

Eyerman, Edward L N
1027 Bellevue Ave
St. Louis, MO 63117
314-644-7177

Fabian, Leonard W AN
660 S Euclid Box 8054
St Louis, MO 63110
314-362-6973

Fabito, Daniel C GS
10004 Kennerly Rd. #208B
St. Louis, MO 63128
314-849-1499

Fallon, Richard H GS
12312 Olive Blvd
St. Louis, MO 63141
314-542-4508

Farberman, Elliott PD
1125 Graham Rd. Suite 6
Florissant, MO 63031
314-921-7509

Faron, Mark A IM
493 St. Francois St.
Florissant, MO 63031
314-831-8600

Farrell, John S IM
12255 DePaul Dr. #460
Bridgeton, MO 63044
314-291-8824

Farzana, Farida P
100 N. Euclid Ste #501
St. Louis, MO 63108
314-361-6885

Fathman, Anthony E U
224 S. Woods Mill Rd.
Suite 510
Chesterfield, MO 63017
314-434-3433

Favors, Adolphus C IM
13045 Tesson Ferry Rd.
St. Louis, MO 63128
314-525-5218

Fehlman, Bernard F AN
918 S. Meramec Ave.
St. Louis, MO 63105
314-771-7600

Feibel, Robt M OPH
1034 S Brentwood Blvd
St Louis, MO 63117
314-727-6716

Feit, Robert M U
6500 Chippewa St. #108
St. Louis, MO 63109
314-351-0155

Feldman, David IM
522 N. New Ballas
St. Louis, MO 63141
314-569-2611

Feliciano, Wilfrido C PS
11155 Dunn Rd. #202E
St. Louis, MO 63136
314-355-5333

Feller, Harold H FP
5834 Bermuda #D
St. Louis, MO 63121

Ferguson, Thomas B CDS
One Barnes Hosp Plaza
St Louis, MO 63110
314-362-7256

Ferrara, Robert P IM
986 Delvin Drive
St. Louis, MO 63141
314-569-6168

Ferrendelli, James A N
517 S. Euclid Ave.
St Louis, MO 63110
314-362-7815

Ferris, Charles W PTH
3015 N. Ballas Rd.
St. Louis, MO 63131
314-569-5207

Ferry, Richard J N
141 Meramec St #315
St. Louis, MO 63105
314-726-3202

Figueroa, Edduyn CHP
1245 Graham Rd. #505
Florissant, MO 63031
314-837-3113

Figueroa, Eliseo O IM
11155 Dunn Rd
St Louis, MO 63136
314-355-2180

Fingert, Hyman H P
4542 Maryland Ave.
St Louis, MO 63108
314-367-6623

Fink, Leroy L GS
11155 Dunn Rd. #202E
St. Louis, MO 63136
314-741-3400

Finkel, Barney W FP
238 Caviller Ct
N Ft. Myers, FL 33917

Finn, Murray E P
1035 Bellevue Ste 205
St Louis, MO 63117
314-644-6200

Finnegan, Jos V IM
11153 Clarissa Drive
St Louis, MO 63141

Fiordelisi, Rocco J GS
6400 Clayton Rd. #107
St Louis, MO 63117
314-644-4220

Fiore, Andrew C TS
6420 Clayton Rd.
St. Louis, MO 63117
314-768-8709

Fischbein, Lewis C RHU
One Barnes Hosp. Plaza
Suite #16422
St. Louis, MO 63110
314-367-9595

Fischer, John R P
P. O. Box 283
Hermann, MO 65041

Fischer, Robert IM
8793 Watson Rd.
St. Louis, MO 63119
314-961-9080

Fish, Virgil O GS
2500 Town & Country La.
St Louis, MO 63131

Fisher, Linda IM
4664 Pershing Place
St. Louis, MO 63108

Fishman, Norman IM
224 S. Woods Mill Suite 410N
Chesterfield, MO 63017
314-469-6224

Fitch, Coy D IM
St. Louis Univ Hosp
3635 Vista Ave.
St. Louis, MO 63110
314-577-8760

Fivian, Gerald J OPH
2821 N Ballas Rd #240
St Louis, MO 63131
314-432-2655

Flance, Israel J PUD
4652 Maryland
St Louis, MO 63108
314-367-3113

Fleishman, Alfred IM
920 Guelbreth Lane #106
St Louis, MO 63141

Fleshman, James W CRS
216 S. Kingshighway
St. Louis, MO 63110
314-454-7177

•Doctor of osteopathy

Fletes, James W FP
7270 Natural Bridge Ave
St Louis, MO 63121
314-383-2156

Flores, Jhonson E AN
442 Cheshire Farm Ct.
St. Louis, MO 63141
314-434-1500

Floro, Kenneth E GS
6400 Clayton Rd.
St. Louis, MO 63117
314-644-2202

Floro, Mariano N GS
11115 New Hallas Ferry
Florissant, MO 63033
314-839-5600

Flotte, Bernard H IM
6 Lila Lane
Florissant, MO 63033

Flotte, Sylvester A IM
11155 Dunn Rd. #207N
St Louis, MO 63136
314-355-8349

Flug, Eric J PD
8919 Pine Acre Rd.
St. Louis, MO 63124
314-966-3324

Flury, Kirk E IM
533 Couch Ave. Ste. 180
St. Louis, MO 63122
314-822-3122

Flye, M. Wayne TS
One Barnes Hosp Plaza #5108
St. Louis, MO 63110
314-362-7145

Flynn, John T FP
6627 Bancroft Ave.
St Louis, MO 63109

Fogarty, William M IM
3915 Watson Rd
St Louis, MO 63109
314-644-7100

Forand, Joseph M AN
7401 Granbury Circle
St. Louis, MO 63123
314-849-1723

Ford, Lee T ORS
One Barnes Hospital Plaza
Suite 11300 W. Pavilion
St Louis, MO 63110
314-362-4080

Ford, Thomas E OPH
2168 Amy Drive #4
Niagara Falls, NY 14304

Forsman, Waldo W IM
4128 S. Lindbergh
St Louis, MO 63127

Forsyth, B. Todd IM
159 North Central
St. Louis, MO 63105
314-863-0739

ouraker, Bradley D OPH
3655 Vista Ave.
St. Louis, MO 63110
314-577-8268

ox, Leon J ORS
903 So. Warson Rd.
St Louis, MO 63124

ox, Robert E IM
1642 Timberlake Manor Pkway
Chesterfield, MO 63017

ox, Thomas J ORS
6400 Clayton Rd.
St. Louis, MO 63117
314-647-8562

rancisco, Dominic S R
13667 Peacockfarm Rd.
St. Louis, MO 63131
314-567-4350

Franklin, Harold A IM
606 S. Meramec
St Louis, MO 63105

Fraser, Danl M TS
1035 Bellevue Ave #211
St Louis, MO 63117
314-644-6300

Frawley, Thomas F IM
621 S. New Ballas Rd. #1013
St. Louis, MO 63141
314-569-6930

Frederickson, Neil W IM
1035 Bellevue
St. Louis, MO 63117
314-645-1344

Fredrickson, John M OTO
Dept of Oto.
517 S. Euclid #8115
St. Louis, MO 63110
314-362-7533

Freedman, Ruth S OPH
10287 Clayton Road #400
St Louis, MO 63124
314-991-1172

Friedman, Paul L AN
7332 Cornell
St Louis, MO 63130
314-768-8301

Friedman, Robt H PD
3009 N. Ballas Rd. #230
St. Louis, MO 63131
314-432-8602

Friedman, William H OTO
Deaconess Med Off Ctr
6125 Clayton #430
St. Louis, MO 63139
314-768-3222

Fries, John W R
9002 Sedgwick Place Dr.
St. Louis, MO 63124
314-842-5600

Frumson, Guy H ORS
12255 DePaul #250
Bridgeton, MO 63044
314-355-1877

Fry, Robert D GS
216 S. Kingshighway
P.O. Box 14109
St. Louis, MO 63110
314-454-7177

Fuleihan, Farid M U
621 S New Ballas #322
St Louis, MO 63141
314-569-6296

Fuller, Terry A P
110 S. Central Suite 400
St. Louis, MO 63105
314-862-6007

Funsch, Robert E ORS
7221 Greenway
St Louis, MO 63130

Furla, August J FP
57 Broadview Dr.
St Louis, MO 63105
314-962-4480

Gabel, Michael G OPH
6400 Clayton Rd
St. Louis, MO 63117
314-647-2277

Gabrawy, Laila G OPH
422 Scottfield Terrace.
Ballwin, MO 63011
314-727-1135

Gado, Mokhtar H N
510 S. Kingshighway
St. Louis, MO 63110
314-362-5950

Gafford, Franklin H IM
10004 Kennerly Rd. #386-B
St. Louis, MO 63128
314-843-2151

Gagliardo, Joseph P
141 N Meramec #303
St. Louis, MO 63105
314-726-5390

Galakatos, Andrew E OBG
224 S Woods Mill Rd Ste 750S
Chesterfield, MO 63017
314-576-9797

Gale, Arthur H IM
2428 Woodson Rd.
St. Louis, MO 63114
314-427-2424

Gall, Ira C OBG
621 S. New Ballas Rd. #4005
St. Louis, MO 63141
314-567-5016

Gandlmayr, Jack M FP
1040 N Mason Rd #104
St Louis, MO 63141
314-434-7400

Gans, Lawrence A OPH
Box 8096 660 S. Euclid #708
St. Louis, MO 63110
314-362-7157

Gansloser, Wilbert M P
230 S. Brentwood
Clayton, MO 63105

Garcia, Delia M ONC
232 S. Woods Mill Rd.
Chesterfield, MO 63017
314-434-2092

Garcia-Ferrer, Eduardo A P
8905 S.W. 80 Terrace
Miami, FL 33173

Garcia-Ferrer, Eduardo L P
11745 Olive St. Rd.
St. Louis, MO 63141
314-567-5011

Garfinkel, Bernard T IM
Associated Internists, Inc.
675 Old Ballas Rd #103
St. Louis, MO 63141
314-567-1902

Garrett, Ted E CDS
621 S. New Ballas Rd. #6017
St. Louis, MO 63141
314-569-6970

Garriga, Francisco J IM
2175 Charbonier
Florissant, MO 63031
314-921-4420

Garvin, Charles F R
232 S. Woods Mill Rd.
Chesterfield, MO 63017
314-851-2932

Garvin, Paul J GS
St. Louis Univ Hosp
3635 Vista Ave.
St. Louis, MO 63110
314-577-8357

Gaskin, Fred W P
11 St. Andrew Drive
St. Louis, MO 63124
314-721-1011

Gatchalian, Felicitas Z IM
1035 Bellevue #203
St. Louis, MO 63117
314-644-0042

Gates, George A OTO
Wash Univ Dept of OTO #817
517 S. Euclid Ave.
St. Louis, MO 63110
314-362-7528

Gavini, Rajendra R GS
6500 Chippewa St. Ste. 118
St Louis, MO 63109
314-352-1425

Gearhart, Wilbur H P
14084 Deltona Drive
Chesterfield, MO 63017

Gedney, Wm B IM
806 Meramec Station Rd
Valley Park, MO 63088
314-825-2423

Geekie, Robert C IM
Primary Care Internal Med
10004 Kennerly Rd #315
St. Louis, MO 63128
314-843-7333

Geise, August W NS
224 S. Woods Mill #6105
Chesterfield, MO 63017
314-878-2888

Geisse, Guillermo R
6150 Oakland
St Louis, MO 63139
314-768-3061

Gellman, Elliot F PD
456 N New Ballas Rd #220
St Louis, MO 63141
314-567-7337

Gelstein, Laurence D U
6500 Chippewa
St. Louis, MO 63109
314-351-0155

Gennaoui, Jad M DR
10010 Kennerly Rd.
St. Louis, MO 63128
314-525-1155

Gentsch, Kenneth W CD
3009 N. Ballas Rd. #100
St. Louis, MO 63131
314-432-1111

George, Philip G ORS
1034 S Brentwood Blvd #650
St Louis, MO 63117
314-721-7325

Gerowin, Lance GS
9440 Midland Blvd.
St. Louis, MO 63114
314-426-3300

Gerst, Aloysius C PD
2005 Kingsgate
St. Louis, MO 63138

Ghosh, Nellie CD
950 Francis Place
St. Louis, MO 63105
314-725-2383

Gibson, Paul H IM
533 Couch Ave. #174
St. Louis, MO 63122
314-965-9980

Gilden, Jerome J ORS
4910 Forest Park #306
St. Louis, MO 63108
314-454-8700

Gilpin, Doris C CHP
2 Delcrest Ct. #101
St. Louis, MO 63124
618-233-3022

Gilula, Louis A DR
250 Dielman Rd
St Louis, MO 63124
314-362-2911

Gimpelson, Richard J OBG
222 So Woods Mill Ste. 400
Chesterfield, MO 63017
314-878-1866

Ginther, James W IM
6500 Chippewa St. #125
St. Louis, MO 63109
314-353-5540

Gladney, John H OTO
100 N Euclid Ave., Ste. 700
St Louis, MO 63108
314-361-8300

Glazer, Harvey S DR
510 S. Kingshighway Blvd.
St. Louis, MO 63110
314-362-2927

---

*Doctor of osteopathy.

Glines, Michael H PD
12 Meramec Hgts Shopping Ctr
Arnold, MO 63010
314-296-4466

Gnade, Albert J GS
7408 Williamsburg Colonial
St. Louis, MO 63119

Godar, Sharon A FP
453 Greenstone Dr.
Chesterfield, MO 63017
314-458-9100

Goebel, Joan M AN
7655 Watson Rd. #435
St. Louis, MO 63119

Goebel, Joel A OTO
One Barnes Hosp Plz Box 8115
St. Louis, MO 63110
314-362-7532

Gold, Jonathan A NS
11155 Dunn Rd. #211-N
St. Louis, MO 63136
314-355-0018

Goldfarb, Alvin GS
675 Old Ballas Rd. #200
St. Louis, MO 63141
314-569-0130

Goldman, Arnold M IM
Associated Internists, Inc.
675 Old Ballas Rd. #103
St. Louis, MO 63141
314-567-1902

Goldman, Gordon M OBG
312 Falling Leaves Ct.
St. Louis, MO 63141
314-878-7333

Goldman, Melvin L IM
8631 Delmar #201
St Louis, MO 63124
314-993-2400

Goldring, David PDC
340 N. Price Rd.
St Louis, MO 63124

Goldring, Sidney NS
660 S. Euclid Ave. Box 8057
St. Louis, MO 63110
314-362-4313

Goldstein, Benjamin M IM
2428 Woodson Rd
St Louis, MO 63114
314-427-2424

Goldstein, Marcy A PS
11026 Lindblade
Culver City, CA 90230

Goltschman, John P OPH
900 N Lindbergh
Florissant, MO 63031
314-838-0300

Gomez, Cesar A GS
3009 North Ballas Rd.
Suite 114
St Louis, MO 63131
314-569-2333

Gonzalez, Alicia D P
777 S. New Ballas Rd. #326W
St. Louis, MO 63141
314-432-7375

Goodenberger, Daniel M IM
441 Oakley Drive
St. Louis, MO 63105
314-362-6904

Goodhope, Karen F DR
7507 Byron Place
Clayton, MO 63105
314-768-3061

Goodman, Nathaniel FP
1 McKnight Place #308C
St. Louis, MO 63124

Goodrich, Steven D OPH
10672 Country View Dr.
St. Louis, MO 63141
314-567-0644

Goran, David A IM
675 Old Ballas Rd. #102
St. Louis, MO 63141
314-569-1950

Gordon, James M OPH
215 Dunn Rd.
Florissant, MO 63031
314-921-2020

Gottlieb, Charlene C IM
114 N. Taylor Ave.
St. Louis, MO 63108
314-534-8600

Gould, Ronald J GE
1035 Bellevue Ave. #407
St. Louis, MO 63117
314-645-1344

Gowda, Siddhesh CD
222 So. Woods Mill Rd. #500N
Chesterfield, MO 63017
314-851-2936

Gowen, Rose M OBG
1035 Bellevue Ave #314
St. Louis, MO 63117
314-647-8300

Grady, Ronald K IM
224 S. Woods Mill Rd. #370
Chesterfield, MO 63017
314-878-2467

Graff, Ralph J GS
Department of Surgery
3635 Vista POBox 15250
St. Louis, MO 63110
314-577-8569

Graham, Joseph E CD
11155 Dunn Rd.
St. Louis, MO 63136
314-355-4571

Grand, M. Gilbert OPH
One Barnes Hosp Plaza 17413
St. Louis, MO 63110
314-367-1181

Grant, John M IM
114 N. Taylor Ave.
St Louis, MO 63108
314-534-8600

Grant, Neville IM
114 N. Taylor Ave.
St Louis, MO 63108
314-534-8600

Graul, Walter P ORS
531 Hickory Lane
St. Louis, MO 63131

Graviss, Edward R DR
1465 S. Grand Blvd
St. Louis, MO 63104
314-577-5654

Gray, Gary J IM
911 S Brentwood #208
St Louis, MO 63105
314-727-5336

Green, Morton R OPH
111 W. Lincoln
Belleville, IL 62220
618-234-1774

Green, Wm R FP
7200 Manchester
St Louis, MO 63143
314-645-7744

Gregory, John G U
6125 Clayton #141
St. Louis, MO 63139
314-843-8000

Gresick, Robert J DR
1100 Thornwood Drive
St. Louis, MO 63124
314-291-0340

Gresick, Robt J PTH
6420 Clayton Rd.
St Louis, MO 63117
314-768-8201

Griesbaum, Robert V IM
12818 Tesson Ferry Rd,.#101
St. Louis, MO 63128
314-849-2277

Grossberg, George T P
St. Louis Univ Med. Ctr.
1221 South Grand
St. Louis, MO 63104
314-577-8726

Grubb, Robert L NS
One Barnes Hosp Plaza
St Louis, MO 63110
314-362-3567

Grundmann, Wm H ORS
12028 Rosevalley Lane
St Louis, MO 63138

Gulick, C. Richard OBG
1034 S Brentwood Blvd. #946
St Louis, MO 63117
314-725-9300

Gunn, Walter T FP
4617 Dahlia Ave.
St. Louis, MO 63116
314-752-2120

Gursahani, Mohan U
950 Francis Place #214
St Louis, MO 63105
314-863-3800

Gutierrez-Medina, Ernesto IM
525 St. Francois St.
Florissant, MO 63031
314-837-3720

Gutwein, Michael B IM
3009 North Ballas Rd.
Suite 100
St. Louis, MO 63131
314-432-1111

Guy, Cynthia S AN
23 Sackston Woods
St. Louis, MO 63141
314-432-1212

Guyol, William B IM
911 Brentwood #218
St. Louis, MO 63105
314-727-5336

Guze, Samuel B P
4940 Audubon Ave.
St. Louis, MO 63110
314-362-7005

Habert, Edward R R
16427 Quiet Creek
Clarkson Valley, MO 63005
314-525-1155

Haddock, James N P
111 Firwood Drive
St Louis, MO 63119

Hagemann, Margarethe H IM
Group Health Plan, Inc.
11475 Olde Cabin Rd.
St. Louis, MO 63141
314-993-5955

Hagemann, Paul O IM
236 Carlyle Lake Dr.
St. Louis, MO 63141

Hagen, Duane Q P
621 S New Ballas Rd #2008
St Louis, MO 63141
314-569-6295

Hagen, Garrett A IM
1035 Bellevue #502
St. Louis, MO 63117
314-645-3400

Hahn, Yoram OBG
1245 Graham Rd.
Florissant, MO 63031
314-831-7800

Hale, Thomas H IM
13611 Barrett Office Drive
Manchester, MO 63021
314-821-1313

Halford, Richard PS
P. O. Box 337
Festus, MO 63028
314-296-7770

Halloran, Mark J IM
621 S New Ballas Rd #460
St. Louis, MO 63141
314-432-3456

Halverson, John D GS
One Barnes Hosp Plaza #5101
St Louis, MO 63110
314-362-7411

Hamilton, Caldwell K PD
11317 Mosley Lane
St. Louis, MO 63141

Hamilton, Eugene G OBG
222 S. Woods Mill Rd. #620
Chesterfield, MO 63017
314-878-8160

Hamilton, William P CD
621 S. New Ballas Rd. #B3005
St. Louis, MO 63141
314-569-6168

Hammerman, Albert M DR
148 Wyckcliffe Place
St. Louis, MO 63141
314-454-7230

Hammerman, Harley J DR
211 Hewlett Ct.
St. Louis, MO 63141
314-947-5200

Hammerman, Marc R IM
660 S. Euclid Ave. Box 8121
St. Louis, MO 63110
314-362-8067

Hammond, D. Wade ORS
533 Couch Ave. Suite 220
St. Louis, MO 63122
314-966-0111

Hammond, David T CD
243 Bristol Rd.
St. Louis, MO 63119
314-432-1111

Hanaway, Joseph N
6400 Clayton #405
St Louis, MO 63117
314-787-0024

Handler, Michael R
533 Couch Ave. Suite 292
Kirkwood, MO 63122
314-821-8881

Hanes, Lily A TR
P.O. Box 104 RR1
Golden Eagle, IL 62036

Hanley, Thomas P OBG
1035 Bellevue #208
St. Louis, MO 63117
314-644-6262

Hanna, Fayez A FP
3394 McKelvey Rd. Suite 101
Bridgeton, MO 63044
314-291-6900

***Hanson, Lesley A** IM
7224 Lindell Blvd.
St. Louis, MO 63130

Hanto, Douglas W GS
One Barnes Hospital Plaza
Suite 5108
St. Louis, MO 63110
314-362-7320

Hantz, Oscar OTO
253 Dunn Rd.
Florissant, MO 63031
314-921-7770

---

*Doctor of osteopathy

Hardin, Wm B N
3009 No Ballas Rd.
Suite 209
St Louis, MO 63131
314-567-3663

Hardy, David A U
911 S Brentwood Blvd
St. Louis, MO 63105
314-725-6551

Hardy, Guerdan OTO
3009 N. Ballas Rd. #228
St. Louis, MO 63131
314-991-0330

Hardy, Jeffery A R
1034 S. Brentwood #280
St. Louis, MO 63117
314-727-0012

Hardy, Patrick J IM
1125 Graham Rd
Florissant, MO 63031
314-838-5700

Hardy, Samuel W IM
621 S. New Ballas Rd
St. Louis, MO 63141
314-567-3066

Harell, Alex ORS
10 Rio Vista Drive
St. Louis, MO 63124

Harper, Fleming B GS
801 South Skinker Blvd
St. Louis, MO 63105

Harrison, Lee B IM
44 Ridgemoor Dr
St. Louis, MO 63105

Harrison, Richard L P
9705 Watson Rd. #411
St. Louis, MO 63126
314-821-2737

Harshman, David M IM
1035 Bellevue Ave Suite 316
St. Louis, MO 63117
314-644-3259

Hart, William G PS
12225 Sunny Terrace
St. Louis, MO 63122
314-997-1549

Hart, William M OPH
660 South Euclid
St Louis, MO 63110
314-362-7162

Hartman, Paul T P
RR #1, Box 230
Biggsville, IL 61418

Hartman, Richard A OBG
911 S. Brentwood Blvd. # 325
St. Louis, MO 63105
314-721-8852

Hartnett, Anna E P
11 South Meramec Ave. #1000
St. Louis, MO 63105
314-727-7700

Hartnett, Thomas D P
11 South Meramec Ave. #1000
St Louis, MO 63105
314-727-7700

Hartstein, Jack OPH
224 S. Woodsmill Rd. #700
Chesterfield, MO 63017
314-469-1122

Harwell, J. Larry PD
950 Francis Place
Med West Bldg #302
St. Louis, MO 63105
314-726-6464

Hasenmueller, James J GS
10004 Kennerly Rd
Suite 110
St Louis, MO 63128
314-842-1890

Hasik, Karl J OBG
70 Jungerman Circle #101
St. Peters, MO 63376
314-926-0404

Hatfalvi, Bela I AN
15 Middlesex Dr
St. Louis, MO 63144

Hatlelid, J. Michael N
6400 Clayton #405
St. Louis, MO 63117
314-781-0024

Haueisen, David C ORS
12615 Old Tesson Road
St. Louis, MO 63128
314-849-0311

Haupt, Herbert A ORS
3009 N. Ballas Rd. #105
St. Louis, MO 63131
314-569-0612

Hawatmeh, Ibrahim S U
10004 Kennerly
St. Louis, MO 63128
314-843-8000

Hawatmeh, Sam S IM
3203 S. Grand Blvd.
St. Louis, MO 63118
314-773-7857

Hawk, Bray O GS
3534 Hawthorne Blvd
St. Louis, MO 63104

Hawker, Wm D OBG
14547 Tramore Dr.
Chesterfield, MO 63017

Hawkins, Geo L NS
12 Chatfield Place Rd.
St. Louis, MO 63141

Hayden, Richard E OTO
4911 Barnes Hospital
St. Louis, MO 63110
314-362-7530

Hazan, Joseph OBG
2428 Woodson Rd.
St Louis, MO 63114
314-427-2424

Headrick, John A IM
11133 Dunn Rd # B202
St Louis, MO 63136
314-355-2300

Hegde, Korgi V IM
3915 Watson Rd
St Louis, MO 63109
314-644-7100

Heins, James N IM
3009 N. Ballas Rd. #100
St. Louis, MO 63131
314-432-1111

Heller, Randall L OBG
1034 Brentwood Suite 946
St. Louis, MO 63117
314-725-9300

Hellweg, Raymond W PD
3220 Parker Rd
Florissant, MO 63033
314-921-4500

Hernandez, Salvador R ORS
12615 Old Tesson Rd.
St. Louis, MO 63128
314-849-0311

Herriford, Merle B U
4520 Newstead Terrace
St. Louis, MO 63115

Herrmann, Virginia M GS
3635 Vista Ave. at Grand
P. O. Box 15250
St. Louis, MO 63110
314-577-8358

Hershey, Falls B GS
11 Wydown Terrace
St. Louis, MO 63105

Hertel, Ronald C ORS
1034 S Brentwood Blvd
St. Louis, MO 63117
314-721-7325

Herzog, Godofredo M OBG
77 Westport Plaza
Suite 265
St. Louis, MO 63146
314-878-7333

Herzog, Jacques A OTO
224 S. Woods Mill Rd. #270
Chesterfield, MO 63017
314-576-7503

Hesker, Albert E R
232 S. Woods Mill Rd.
Chesterfield, MO 63017
314-434-1500

Hess, John P IM
3009 N. Ballas Road
St. Louis, MO 63131
314-432-2535

Heusler, Anton F P
9111 Clayton Rd.
St. Louis, MO 63124

Heutel, Lee B FP
7200 Manchester
St Louis, MO 63143
314-645-7744

Hickey, James L OBG
621 S New Ballas Rd #7003
St. Louis, MO 63141
314-567-5515

Hicks, Frederick G P
3009 No. Ballas Rd.
St. Louis, MO 63131
314-567-5000

Hicks, Robert S P
#1 Barnes Hosp Plaza #16428
St. Louis, MO 63110
314-367-4500

Higgins, Philip C OBG
621 S. New Ballas Rd. #207
St Louis, MO 63141
314-432-8505

Hilbert, Paul H FP
2905 Cherokee St
St Louis, MO 63118
314-771-2428

Hildreth, H. Rommel OPH
13900 Clayton Rd.
Ballwin, MO 63011

Hill, M. Robert IM
6150 Oakland Ave.
St. Louis, MO 63139
314-768-3000

Hill, XaCadene A FP
4257 St. Louis Ave.
St. Louis, MO 63115

Hinrichs, James H IM
330 First Capitol Drive #470
St. Charles, MO 63301
314-946-4909

Hironimus, John E D
6651 Chippewa St
St Louis, MO 63109
314-645-5320

Hirshberg, Gary E AN
5751 Lindell Blvd.
St. Louis, MO 63112
314-454-7954

Ho, Judith E PD
615 South New Ballas Rd.
St. Louis, MO 63141
314-569-6463

Hobbs, John E OBG
907 Lariat Dr.
Eugene, OR 97401

Hoehn, John P GS
621 S. New Ballas Rd.
St. Louis, MO 63141
314-567-9928

Hoffman, Mark J DR
15 Ridgemoor Drive
St. Louis, MO 63105
314-926-1160

Hoffman, William F N
11155 Dunn Rd. #211N
St. Louis, MO 63136
314-355-0018

Hoffmann, Ronald E ORS
950 Francis Place Ste 14
St. Louis, MO 63105
314-862-2012

Hoffmann, Sandra S IM
7495 S. Lindbergh
St. Louis, MO 63125
314-894-0257

Hofstatter, Leopold N
768 Glen Vista PL.
St Louis, MO 63122
314-644-8107

Hogan, Cornelius E IM
3860 Loughborough
St. Louis, MO 63116
314-752-1680

Hogan, John R IM
1035 Bellevue Ave.
St Louis, MO 63117
314-644-6161

Hogan, Patrick C OBG
10004 Kennerly Rd
St Louis, MO 63128
314-842-3445

Hogan, Patrick A N
1034 S Brentwood #840
St Louis, MO 63117
314-725-1522

Holder, Barrett K ORS
3009 North Ballas Rd.
St. Louis, MO 63131
314-569-0612

Holemon, R. Eugene P
3009 N. Ballas Rd
St. Louis, MO 63131
314-567-5000

Hollo, Vencel W GS
200 S. Brentwood Blvd. #7D
St. Louis, MO 63105
314-725-4747

Hollocher, Richard J ORS
621 S. New Ballas Rd. #5015
St. Louis, MO 63141
314-567-5850

Holloway, Robert B AN
8018 Stanford Ave.
St. Louis, MO 63130
314-289-6369

Holmes, Nancy E PD
8515 Delmar #217
St. Louis, MO 63124
314-997-7004

Holtmann, Barbel PS
One Barnes Hosp Plz
St. Louis, MO 63110
314-362-6973

Holtz, Alan S GS
4525 Laclede Ave. #5
St. Louis, MO 63108
314-361-7140

Holtz, Sumner DR
232 S. Woods Mill Rd.
Chesterfield, MO 63017
314-434-1500

Hookerman, Bruce J D
12105 Bridgeton Square Dr.
Bridgeton, MO 63044
314-291-2588

Hooper, Anthony C DR
828 St. Paul Run
Ballwin, MO 63021
314-291-0340

---

*Doctor of osteopathy.

Horan, John J PD
9701 Landmark Parkway Dr.
St. Louis, MO 63127
314-849-3885

Horenstein, Simon N
3655 Vista Ave.
St. Louis, MO 63110
314-776-8100

Horner, John L IM
1027 Cy Ann Dr.
Manchester, MO 63011

Horwitz, Irwin B ORS
900 S. Hanley Road #10-D
Clayton, MO 63105

Houck, William E OBG
1034 S. Brentwood Blvd. #946
St. Louis, MO 63117
314-725-9300

Howe, Albert L IM
31 York Drive
St. Louis, MO 63144
314-658-5638

Hruska, Keith A IM
216 S. Kingshighway
St. Louis, MO 63110
314-454-7770

Hruza, George J D
One Barnes Hospital Plaza
Suite 16411
St. Louis, MO 63110
314-362-5599

Hubert, John W IM
12255 DePaul Dr. #865
Bridgeton, MO 63044
314-291-7730

Hubert, John P GS
10004 Kennerly Rd. #103
St. Louis, MO 63128
314-843-5198

Huck, Richard F IM
2821 N Ballas
St Louis, MO 63131
314-872-9310

Hudgens, Richard W P
4940 Audubon #1117
St. Louis, MO 63110
314-362-2622

Huffaker, William H PS
222 S Woods Mill Rd. #370
Chesterfield, MO 63017
314-434-6625

Huggins, Albert M IM
6651 Chippewa St
St Louis, MO 63109
314-644-3997

Hughes, Robt G OM
41 Chaminade Dr.
St. Louis, MO 63141
314-567-5770

Hulbert, Bernard IM
8112 Delmar Blvd
St Louis, MO 63130
314-725-7400

Hulbert, Laura R OBG
32 Ladue Estates
St. Louis, MO 63141
314-487-5227

Hummel, Anton J OPH
5203 Chippewa St
St Louis, MO 63109
314-352-1881

Hummel, Wm C R
456 N. New Ballas Rd.
St Louis, MO 63141
314-567-1656

Hunleth, Frank E OBG
13131 Tesson Ferry Rd.
St. Louis, MO 63128
314-842-7910

***Hunter, Harlen C** ORS
14377 Woodlake Dr. Suite 311
Chesterfield, MO 63017
314-878-4446

Hurley, Joseph J GS
621 S New Ballas Rd
St Louis, MO 63141
314-567-6666

Hutchinson, William B DR
3009 N. Ballas Ste.131
St Louis, MO 63131
314-432-3770

Hyers, Thomas M IM
3635 Vista at Grand
POBox 15250
St. Louis, MO 63110
314-577-8856

Ikeda, Shigemasa AN
3635 Vista Ave. at Grand
P.O.Box 15250
St. Louis, MO 63110
314-577-8750

Ingram, Donald R OTO
2360 Truman Blvd.
Crystal City, MO 63019
314-937-6332

Inman, Max M IM
314 Travertine Lane
Chesterfield, MO 63017
314-644-7100

Ip, Aidan W PD
2821 N. Ballas Rd.
St. Louis, MO 63131
314-432-1854

Irvin, Wm M P
1035 Bellevue Ste 205
St Louis, MO 63117
314-644-6200

Ishida, Yasuo OBG
6744 Clayton Rd
St Louis, MO 63117
314-645-6100

Isserman, Michael J OPH
456 N. New Ballas Rd. #118
St Louis, MO 63141
314-432-1134

Ittner, Geo W IM
4400 Lindell Blvd. #12H
St. Louis, MO 63108

Iwane, Akira AN
1801 Summer Blossom Place
Chesterfield, MO 63017
314-434-1500

Izmirlian, Grant FP
14796 Clayton Rd. #6
Ballwin, MO 63011
314-394-0070

Jablonski, Raymond C R
9088 Fernald
St. Louis, MO 63123
314-947-5444

Jackson, Darwin C OBG
6125 Clayton Suite 211
St. Louis, MO 63139
314-644-5144

Jacob, Karl A NS
777 S. New Ballas Rd. #129 W
St Louis, MO 63141
314-567-9955

Jacobs, Chas C OTO
111 Church St. # 212
St Louis, MO 63135
314-521-1414

Jacobs, Frederick A PD
10929 Abbott Ave
Sun City, AZ 85351

Jain, Sumer C AN
12122 Carberry Pl
St. Louis, MO 63131

Jain, Savitri G IM
533 Couch Ave. #186
St. Louis, MO 63122
314-821-9140

Jarvis, Cathy C IM
493 St. Francois St.
Florissant, MO 63031
314-831-8600

Jatala, Ijaz A P
2120 Madison Ave. #204
Granite City, IL 62040
618-876-7515

Javdan, Ron IM
224 S. Woods Mill Rd. #580
Chesterfield, MO 63017
314-434-1399

Jean, J T IM
550 S. Brentwood Blvd. #28C
St. Louis, MO 63105

Jensen, Joshua E GS
11155 Dunn Rd.
St. Louis, MO 63136
314-741-3400

Jensen, Joshua E GS
995 Sword Ct.
P. O. Box 173
Lake Sherwood, MO 63357

Jick, Sidney CD
675 Old Ballas
St. Louis, MO 63141
314-567-7090

Joffe, Wm S OPH
211 N Meramec Ave
St. Louis, MO 63105
314-726-0025

Johans, Thomas G AN
621 S. New Ballas Rd #629
St. Louis, MO 63141
314-872-8222

Johnson, Charles J PS
11709 Old Ballas Rd. #201
St. Louis, MO 63141
314-993-8281

Johnson, Frank E GS
3635 Vista At Grand
P.O.Box 15250
St. Louis, MO 63110
314-771-8312

Johnson, Kevin T IM
3394 Mckelvey Rd.
Bridgeton, MO 63044
314-739-5070

Johnson, Michael K OBG
7605 Natural Bridge Rd. #101
St. Louis, MO 63121
314-385-7001

Johnson, Randy G IM
Cardiology & Critical Care
5453 Chippewa St
St. Louis, MO 63109
314-351-8880

Johnson, Steven M PTH
925 Coal Bank Road
St. Louis, MO 63138
314-355-2300

Johnson, Tom A FP
615 So New Ballas Rd
St Louis, MO 63141
314-569-6010

Johnston, Glen P OPH
1221 Judy Circle
Bonne Terre, MO 63628

Johnstone, John T IM
314 Papin Ave.
St. Louis, MO 63119

Jones, Otey S FP
2010 Longfellow
St Louis, MO 63104

Jones, Bruce N ORS
224 Woods Mill Rd. South
Suite 255
Chesterfield, MO 63017
314-434-3240

Jones, Dorothy J PD
One McKnight Place #119
St. Louis, MO 63124

Jones, Georgia A P
621 S. New Ballas Suite 374
St. Louis, MO 63141
314-569-2048

Jones, James H OPH
1035 Bellevue Ave #416
St Louis, MO 63117
314-647-4034

Jones, Richard A IM
332 Calvert Ave.
St. Louis, MO 63110

Joseph, Harold J IM
3009 N. Ballas #315
St. Louis, MO 63131
314-872-8740

Joslyn, Harold L GE
1930 Tile Factory Rd.
Mt Vernon, IN 47620

Jost, Charles A FP
118 Doubloon Drive
N. Ft. Myers, FL 33917

Jost, R. Gilbert DR
Mallinckrodt Inst of Rad
510 S Kingshighway 1203
St. Louis,, MO 63110
314-362-7130

Jotte, Richard F FP
10300 St Charles Rock Rd
St Ann, MO 63074
314-427-2022

Jotte, Richard P IM
10300 St. Charles Rock Rd.
St. Ann, MO 63074
314-427-2022

Judd, Donald R TS
6125 Clayton Ave.
St. Louis, MO 63139
314-647-5525

Juergens, Wm G IM
1034 S Brentwood Blvd
St Louis, MO 63117
314-721-0666

Julien, Rene GS
P. O. Box 852
E. St. Louis, IL 62203

Kairuz, Bartolome C FP
12621 Bradford Woods
St. Louis, MO 63127
314-843-4444

Kaiser, George C GS
3635 Vista at Grand
P.O.Box 15250
St. Louis, MO 63110
314-577-8351

Kaiser, Larry R TS
One Barnes Hosp. Plz #3107
St. Louis, MO 63110
314-362-6025

Kamakas, Nicholas C PD
1245 Graham Rd #402
Florissant, MO 63031
314-838-3800

Kamel El-Din, Ali S AN
14376 Appalachian Trails
Chesterfield, MO 63017
314-355-2300

Kamenetzky, Stephen A OPH
4910 Forest Park Ave. #300
St. Louis, MO 63108
314-367-0071

---

*Doctor of osteopathy.

Kaminski, Donald L GS
3635 Vista At Grand
P.O.Box 15250
St. Louis, MO 63110
314-577-8353

Kang, Johanna J AN
1319 Riverdale Cirle
Chesterfield, MO 63005
314-839-3800

Kang, Juan PTH
11133 Dunn
St Louis, MO 63136
314-355-2300

Kantor, Owen IM
One Barnes Hospital Plaza
Suite #16422
St Louis, MO 63110
314-367-9595

Kaplan, Alex H P
4524 Forest Park Ave
St Louis, MO 63108
314-367-6243

Kaplan, Henry J OPH
660 S. Euclid Ave. Box 8096
St. Louis, MO 63110
314-362-3744

Kappesser, Roland C AN
55 Fair Oaks
St Louis, MO 63124

Kappesser, Netajean G FP
55 Fair Oaks Dr
St Louis, MO 63124
314-966-1500

Kardesch, Milton IM
533 Couch Ave. Suite 281
St. Louis, MO 63122
314-965-2322

Karl, Michael M IM
14 Thorndell Dr.
St. Louis, MO 63117
314-362-8070

Karsh, Robt S IM
2428 Woodson Rd
St Louis, MO 63114
314-427-2424

Kass, Michael A OPH
660 S Euclid Ave #761
St. Louis, MO 63110
314-362-7159

Katsantonis, George OTO
6125 Clayton Ave. #430
St. Louis, MO 63139
314-768-3222

Kaufman, Bruce A NS
400 S. Kingshighway Ste 1546
St. Louis, MO 63110
314-454-2812

Kaufman, Robt L IM
456 N New Ballas Rd
Suite 299
St Louis, MO 63141
314-569-1090

Kaup, Chandra S IM
1125 Graham Rd
Florissant, MO 63031
314-838-5700

Kayes, Jack OPH
211 N Meramec
St Louis, MO 63105
314-863-4200

Keating, James P PD
400 S. Kingshighway
St Louis, MO 63110
314-454-6006

Keenan, William
1465 S. Grand Blvd
St. Louis, MO 63104
314-577-5642

Keffler, Karl L FP
430 Clif-Side Dr.
St Louis, MO 63122

Keller, Maurice J PD
9049 Clayton Rd.
St Louis, MO 63117

Keller, Stephen M R
307 Cabin Grove Lane
St. Louis, MO 63141
314-569-6031

Kellett, John G FP
243 Kenora Ct.
St. Louis, MO 63119

Kelly, John J IM
3009 No. Ballas Rd. #100
St Louis, MO 63131
314-432-1111

Kelly, R E OM
665 S. Skinker
St Louis, MO 63105
314-621-4300

Keltner, Raymond M GS
3635 Vista At Grand
P.O.Box 15250
St. Louis, MO 63110
314-577-8313

Kemp, Michele E PD
1585 Woodlake Drive #201
Chesterfield, MO 63017
314-878-2788

Kendis, Joseph B IM
900 S. Hanley #3E
St. Louis, MO 63105

Kenneally, Cynthia Z OPH
621 S. New Ballas #5018
St. Louis, MO 63141
314-567-5602

Kennedy, David G NS
6725 Chippewa St.
St. Louis, MO 63109
314-644-7111

Kenney, John D ORS
6400 Clayton Road #110
St Louis, MO 63117
314-645-6051

Kennington, L J FP
14382 Woodlake Dr.
Chesterfield, MO 63017
314-434-3333

Kessel, James W OBG
3009 N. Ballas Rd. Suite 142
St Louis, MO 63131
314-432-8388

Kessler, Sheldon PD
12255 DePaul Dr., Suite 490
Bridgeton, MO 63044
314-739-5333

Khan, Abdul G PD
4150 Jeffco Blvd.
Arnold, MO 63010
314-464-1000

Khan, Altaf A GE
325 N. Kirkwood
St Louis, MO 63122
314-966-6790

Khouri, Roger K PS
One Barnes Hospital Plaza
Suite 17424 E Pavillion
St. Louis, MO 63110
314-362-7388

Kielmovitch, Izak H OTO
6125 Clayton Ave. Suite 430
St. Louis, MO 63139
314-768-3222

Kienzle, Edward FP
P. O. Box 356
Bonne Terre, MO 63628

Kilgore, John W IM
6400 Clayton Rd. #212
St. Louis, MO 63117
314-533-3494

Kilo, Charles IM
1227 Fernridge Parkway #110
St Louis, MO 63141
314-434-8850

Kim, Stanley W R
777 S New Ballas Rd. #121E
St. Louis, MO 63141
314-567-4350

Kim, William W AN
St. Louis Univ Hosp
3635 Vista Ave.
St. Louis, MO 63110
314-577-8000

Kimelman, Nathan IM
21 Granada Way
St Louis, MO 63124

King, Francis C FP
1 Whitehall Ct
St Louis, MO 63144

King, John V FP
488 Flanders Dr.
St Louis, MO 63122

King, M. Kenton IM
660 S Euclid #1813
St. Louis, MO 63110
314-362-6830

King, Eustace E FP
1559 Charlemont Dr.
Chesterfield, MO 63017

King, Gregory S PTH
11133 Dunn Rd. (LAB)
St. Louis, MO 63136
314-355-2300

King, Donald K IM
7943 Big Bend Blvd.
St. Louis, MO 63119
314-961-3431

King, John V PUD
3394 McKelvey Rd.
Bridgeton, MO 63044
314-739-5070

Kingsland, Robert C IM
480 Pheasant Dr.
Sarasota, FL 34236

Kinsella, Peter W IM
1035 Bellevue #407
St. Louis, MO 63117
314-645-1344

Kinsella, Edward D GE
1035 Bellevue Ave. #407
St. Louis, MO 63117
314-645-1344

Kinsella, Ralph A IM
#53 Hanley Downs
St. Louis, MO 63117
314-577-8096

Kipnis, David M IM
660 S Euclid
St Louis, MO 63110
314-362-8060

Kissane, John M PTH
660 S. Euclid
St Louis, MO 63110
314-362-7440

Kissel, John H IM
5535 Delmar Blvd.
St. Louis, MO 63112
314-879-6363

Kistler, W. David IM
950 Francis Place
St. Louis, MO 63105
314-721-0411

Kistner, William F PUD
621 S New Ballas Rd #142
St. Louis, MO 63140
314-569-3161

Kitchen, Alice D P
6336 Pershing Ave.
St. Louis, MO 63130
314-781-3500

Kitchin, Winston H P
6400 Clayton Rd., Suite 412
St. Louis, MO 63117
314-647-9100

Kiyanclar, M. Emin AN
2451 Oak Springs Lane
St. Louis, MO 63131
314-525-1953

Klearman, Micki IM
East Pavilion Suite 16422
One Barnes Hosp Plaza
St. Louis, MO 63110
314-367-9595

Klein, Saul J U
456 N New Ballas Rd #348
St. Louis, MO 63141
314-567-6071

Klein, Bert H FP
P. O. Box 35
34 N. Ridgewood Ave.
Arcadia, MI 49613

Klippel, Allen P GS
8144 Kingsbury Blvd.
St. Louis, MO 63105
314-878-2922

Knight, James W GS
7601 Natural Bridge Ave.
Suite 101
St. Louis, MO 63121
314-385-7300

Knight, Wm A GE
1035 Bellevue Ave.
St Louis, MO 63117
314-645-3400

Knock, Henry L PD
325 N. Kirkwood Rd.
St. Louis, MO 63122
314-966-8728

Knopf, Harry L OPH
211 N Meramec St
St. Louis, MO 63105
314-863-4200

Knowles, R. Raymond P
1034 S. Brentwood Blvd #754
St. Louis, MO 63117
314-725-0667

Kodner, Ira J CRS
216 S. Kingshighway
St Louis, MO 63110
314-454-7177

Koehler, Geo A IM
224 S. Woods Mill Rd. #315 S
Chesterfield, MO 63017
314-576-5014

Koenig, Marvin I OPH
9807 Log Cabin Ct.
St. Louis, MO 63124
314-838-0300

Koerner, Kenneth A PD
12940 Topping Estates Dr.
St. Louis, MO 63131

Kofkoff, Richard L PS
12255 DePaul Dr. #290
Bridgeton, MO 63044
314-739-8884

Kolker, Allan E OPH
4901 Barnes Hosp Plz
Box 8096 #761
St Louis, MO 63110
314-362-7159

Kopen, Dan F GS
480 Pierce St. Ste 318
Kingston, PA 18704
314-569-6441

Kopp, Shelby K OM
11124 Apache Trail
St. Louis, MO 63146
314-567-5770

---

*Doctor of osteopathy.

Korenblat, Phillip E A
10287 Clayton Rd. #212
St. Louis, MO 63124
314-997-3212

Korn, Robert L PD
25 Broadview Farm Rd
St. Louis, MO 63141

Kotner, Lawrence M IM
10358 Chimmey Rock Apt 14
St. Louis, MO 63146

Kotner, Lawrence M R
270 Bellington Lane
St. Louis, MO 63141
314-454-7230

Kouchoukos, Nicholas T GS
216 S. Kingshighway Blvd
St. Louis, MO 63110
314-454-7175

Kovac, S. Robert OBG
621 S. New Ballas Rd. #7011
St Louis, MO 63141
314-991-0300

Kowert, Edward H P
One Barnes Hosp Plz #16303
St Louis, MO 63110
314-367-3829

Kraeger, Russell R TS
533 Couch Ave.
St Louis, MO 63122
314-965-9660

Kraemer, Bruce A PS
One Barnes Hospital Plaza
Suite 17424
St. Louis, MO 63110
314-362-7388

Kraetsch, Robert E IM
One Barnes Hospital Plaza
Suite #16422
St Louis, MO 63110
314-367-9595

Krain, Samuel R
17 Briar Cliff
St Louis, MO 63124
314-567-1656

Krajcovic, David P
224 S. Woods Mill Rd. #640
Chesterfield, MO 63017
314-434-1211

Kraner, Justin F OBG
2428 Woodson Rd.
St. Louis, MO 63114
314-427-2424

Krantman, Herbert J A
777 S. New Ballas Rd. #218E
St. Louis, MO 63141
314-569-2015

Kraybill, William G GS
One Barnes Hosp Plaza
St. Louis, MO 63110
314-362-1602

Kreisman, Jerold J P
621 S. New Ballas Rd #B-4018
St. Louis, MO 63141
314-997-3443

Kreski, Kenneth C IM
3830 Four Ridge Rd.
House Springs, MO 63051
314-961-3038

Kretchmar, Alan P OPH
3009 N Ballas Rd.
St Louis, MO 63131
314-872-7263

Krettek, John E NS
224 S. Woods Mill Rd. #610
Chesterfield, MO 63017
314-878-2888

Kreusser, Katherine L PD
8025 Dale Ave.
St. Louis, MO 63117
314-644-2566

Krewet, Frank A IM
12538 Windmoor Pl
St Louis, MO 63131
314-649-2075

Krieger, John L AN
28 Berry Road Park
St. Louis, MO 63122
314-961-3820

Kriegshauser, James W IM
3915 Watson Rd.
St. Louis, MO 63109
314-644-7100

Kriegshauser, Lawrence A ORS
12615 Old Tesson Rd.
St. Louis, MO 63128
314-849-0311

Kroeger, Geo B OTO
621 S New Ballas Rd
St Louis, MO 63141
314-567-9230

Krojanker, Rolf J P
6651 Chippewa
St Louis, MO 63109
314-644-2395

Kromer, Chas J IM
3545 Lafayette
St Louis, MO 63104
314-664-6500

Kronemer, Norton S PD
9701 Landmark Parkway Dr#109
St. Louis, MO 63127
314-849-2400

Krummenacher, Thomas K OPH
1034 S. Brentwood Blvd.#1625
St. Louis, MO 63117
314-727-6711

Kuczer, Arnoldo OTO
3635 Vista at Grand
P. O. Box 15250
St. Louis, MO 63110
314-577-8884

Kuebel, Richard J IM
12033 Robyn Park Dr.
St. Louis, MO 63131
314-872-8636

Kuhlengel, Barbara G P
Rt. 2, Box 313J
Palmyra, PA 17078

Kuhlman, Ralph F IM
1034 S Brentwood Blvd #1020
St Louis, MO 63117
314-721-0666

Kuhlman, Robert E ORS
One Barnes Hosp Plaza #16301
#16301
St Louis, MO 63110
314-367-4338

Kuhn, Lawrence F P
621 S New Ballas #4018
St. Louis, MO 63141
314-997-3443

Kulak, Gary P
621 S New Ballas #374
St Louis, MO 63141
314-567-4470

Kulkarni, Nandini S AN
621 S. New Ballas Rd. # 137
St. Louis, MO 63141
314-569-6987

Kumari, Vijaya OBG
3009 North Ballas Rd. # 208
St. Louis, MO 63131
314-872-9200

Kunst, Edward J IM
13611 Barrett Office Dr.
Ballwin, MO 63021
314-821-1313

Kwoun, Soung GS
11726 St. Charles Rock Rd.
Bridgeton, MO 63044
314-739-6099

L'Ecuyer, Jerome L PD
9313 Manchester Rd
St Louis, MO 63119
314-968-2260

Ladd, Charles B GP
13045 Tesson Ferry Rd
St. Louis, MO 63128
314-525-5655

LaDriere, Raymond J PD
7545 Parkdale #3-S
St. Louis, MO 63105

Laird, John M IM
3009 N. Ballas Rd.
Suite 108
St. Louis, MO 63131
314-872-3620

Lamb, Wanda P
456 N New Ballas Rd
Suite 282
St Louis, MO 63141
314-567-5707

Lamberg, Robert L OPH
211 North Meramec Ave #301
St. Louis, MO 63105
314-726-2277

Lamping, J. Daniels OBG
621 S. New Ballas
St. Louis, MO 63141
314-991-3070

Lampros, William P OTO
621 S. New Ballas #149
St. Louis, MO 63141
314-567-9230

Landau, David W IM
11155 Dunn Rd
St. Louis, MO 63136
314-355-4010

Landau, Wm M N
660 S Euclid Ave
Box 8111 - #301
St. Louis, MO 63110
314-362-7177

Landry, J. Hubert R
13133 Conway Road
St. Louis, MO 63141

Landy, Richard PTH
54 Berkshire Dr.
St. Louis, MO 63117
314-768-3257

Lane, Daniel K D
950 Francis Pl Ste 203
St. Louis, MO 63105
314-862-0992

Lang, John J R
507 Fairways Circle
St Louis, MO 63141
314-434-1500

Lange, David R ORS
3165 McKelvey Rd. #100
Bridgeton, MO 63044
314-344-6900

Lansche, W. Edward ORS
3009 N. Ballas Rd.
St. Louis, MO 63131
314-569-0612

Lappas, Demetrios G AN
12909 Topping Estates Dr.
St. Louis, MO 63131
314-362-6584

Larocca, Felix E. F. CHP
6125 Clayton Ave. #215
St. Louis, MO 63139
314-567-4080

Larson, Paul U IM
6223 Southland
St Louis, MO 63109

Lattinville, Henry E NS
12255 DePaul Dr. #830
Bridgeton, MO 63044
314-291-6556

Lauber, Joseph J FP
615 S New Ballas Rd
St Louis, MO 63141
314-529-6010

Lauter, Steven IM
3009 N. Ballas #315
St. Louis, MO 63131
314-872-8740

Laux, France A PTH
3015 N. Ballas Rd.
St. Louis, MO 63131
314-569-5218

Lawrence, Geo H N
1919 Leisure World
Mesa, AZ 85206

Lawton, John T IM
1538 Woodlake Drive
Chesterfield, MO 63017
314-878-6550

Leary, Daniel J R
615 S New Ballas Rd Rad/Dept
St. Louis, MO 63141
314-569-6031

LeBlanc, Leo J CRS
8038 Davis Drive
Clayton, MO 63105

Lee, Leander K AN
3015 N. Ballas Rd.
St. Louis, MO 63131
314-569-5287

Lee, Fransiska A ONC
621 So. New Ballas Rd.
St Louis, MO 63141
314-569-6844

Lee, Joseph King Tak R
510 S. Kingshighway Blvd.
St. Louis, MO 63110
314-362-2967

Lehman, Robert B IM
3009 N. Ballas Rd. Ste 100
St. Louis, MO 63131
314-432-1111

Leidenfrost, Ronald D IM
222 S. Woods Mill Rd. #550
Chesterfield, MO 63017
314-434-3049

Leightner, William F IM
2627 Telegraph Rd.
St. Louis, MO 63125
314-487-4390

Leming, Bert H PTH
11714 Craigview Dr
St Louis, MO 63141

Lenobel, Milton I ORS
3660 Gulf of Mexico Dr.
Apt. A 201
Longboat Key, FL 34228

Leonhardt, Erwin M IM
11222 Tesson Ferry Rd. #101
St. Louis, MO 63123
314-843-3800

Lerwick, Everett R GS
3009 N. Ballas
St Louis, MO 63131
314-567-5377

Levin, Marvin E IM
732 Fairfield Lake Drive
Chesterfield, MO 63017

Levine, Laurence A OTO
2730 Highway 94S #201
St. Charles, MO 63303
314-926-2020

Levine, Richard S DR
615 S. New Ballas Rd.
St. Louis, MO 63141
314-569-6031

---

*Doctor of osteopathy

Levitt, Joseph IM
8011 Clayton Road #100
St. Louis, MO 63117
314-727-1977
Levitt, Robert G DR
13134 Thornhill Drive
St. Louis, MO 63131
618-463-7414
Levy, Morton A IM
522 N. New Ballas #371
St. Louis, MO 63141
314-569-0160
Levy, Jerome F GS
One Barnes Hosp Plaza
Suite 17308
St Louis, MO 63110
314-367-9400
Lewin, W. Howard OPH
818 Olive St Suite 450
St Louis, MO 63101
314-421-1749
Lewis, Lawrence M IM
3635 Vista at Grand
P.O.Box 15250
St. Louis, MO 63110
314-577-8776
Lewis, Robert D OPH
10004 Kennerly Rd. 283-B
St. Louis, MO 63128
314-842-0582
Lewis, J. Eugene PDS
625 S. Skinker Apt. 903
St. Louis, MO 63105
Liao, Kun T PTH
2040 Concourse Dr.
St. Louis, MO 63146
314-872-7144
Lickenbrock, Karen A FP
2900 Lemay Ferry Rd. #224
St. Louis, MO 63141
314-432-1875
Lieb, Francis X PD
12 Cary Lane
Bloomfield, CT 06002
203-726-5973
Lieberman, David M IM
4989 Barnes Hosp Plaza #6105
St Louis, MO 63110
314-361-5300
Liebhaber, Harvey IM
456 N. New Ballas
St Louis, MO 63141
314-432-0902
Lilly, Douglas R NM
621 S New Ballas Rd
St Louis, MO 63141
314-432-3456
Lim, Piemsak OBG
3478 Bridgeland Suite #4
Bridgeton, MO 63044
314-291-3770
Lima, Jose A OTO
10004 Kennerly Rd. #183-B
St. Louis, MO 63128
314-843-8400
Lin, Hsiu-San TR
510 S. Kingshighway
St. Louis, MO 63110
314-362-7030
Link, Alexander J DR
7215 Maryland
St Louis, MO 63130
Lipschitz, Ervin P
777 S New Ballas Rd #327E
St Louis, MO 63141
314-872-7646

Lipsitz, Ellis S IM
970 N. Spode Rd.
St. Louis, MO 63146
Lischwe, Daniel H FP
12255 DePaul Drive
Suite 600
Bridgeton, MO 63044
314-291-1074
Liss, Jay L P
763 South New Ballas Rd
#350
St Louis, MO 63141
314-569-0212
Litzow, Peter L R
520 Locust Ct.
Webster Groves, MO 63119
314-569-6031
Livingston, Don G PD
15274 Manchester
Ballwin, MO 63011
314-527-6960
Loeb, Virgil IM
One Barnes Hosp Plaza #3103
St Louis, MO 63110
314-362-7253
Loeffel, Ellen S GYN
3013 Hawthorne Blvd.
St Louis, MO 63104
Logan-Morrison, Beverly A IM
8515 Delmar Blvd. #220 W
St. Louis, MO 63124
314-997-6154
Logie, Macdonald B R
2639 Miami St.
St. Louis, MO 63118
314-577-5717
Lohr, Robt W R
236 Conway Hill Rd
St Louis, MO 63141
Loitman, Bernard S R
10 Washington Terr
St Louis, MO 63112
314-621-3378
Lombardo, Joseph A PTH
2040 Concourse Dr.
St. Louis, MO 63146
314-872-2617
Londe, Alan M GS
675 Old Ballas Rd. #200
St. Louis, MO 63141
314-569-0130
London, Stanley L GS
675 Old Ballas Rd. #200
St. Louis, MO 63141
314-569-0130
Lonergan, Warren M IM
1507 Mallard Landing Court
Chesterfield, MO 63017
314-361-1167
Long, Frank B OBG
14943 Green Circle Dr.
Chesterfield, MO 63017
Lonsway, Maurice J PD
8025 Dale Ave
St Louis, MO 63117
314-644-2566
Lopez, Marvin J GS
One Barnes Hosp Plaza #5102
St. Louis, MO 63110
LoPiccolo, Vincent J PD
2821 N Ballas Rd
St Louis, MO 63131
314-567-4806
Lord, Richard E ORS
621 S. New Ballas #50
St. Louis, MO 63141
314-872-8380
Loth, Timothy S ORS
7240 Westmoreland
St. Louis, MO 63130
314-577-8850

Lottes, J. Otto ORS
2646 Michigan Ave.
St Louis, MO 63118
314-771-0844
Loynd, Robt C OTO
950 Francis Pl
St. Louis, MO 63105
314-727-3070
Lubowitz, Herbert IM
8515 Delmar Blvd. #208
St. Louis, MO 63124
314-991-1766
Lucas, Thomas G P
9701 Landmark Parkway Dr 203
St. Louis, MO 63127
314-842-1832
Ludwig, Mark A GS
675 Old Ballas Rd.
St. Louis, MO 63141
314-569-0130
Luechtefeld, Frank ORS
12255 DePaul Dr
Bridgeton, MO 63044
314-739-7654
Lugo, Saml GS
2900 Lemay Ferry Rd
St Louis, MO 63125
314-487-3775
Luh, Andrew M ORS
5441 Donovan
St. Louis, MO 63109
Lund, Herluf G U
58 Portland Dr.
St. Louis, MO 63131
Lund, Robert H D
Suite 710 N.
222 S. Woods Mill Rd.
Chesterfield, MO 63017
314-576-1411
Luther, George A ORS
533 Couch Ave.
Suite 220
St Louis, MO 63122
314-966-0111
Lyman, Edward H OTO
950 Francis Pl
St Louis, MO 63105
314-727-3132
Lyss, Carl A IM
456 N New Ballas Rd #299
St. Louis, MO 63141
314-569-1090
Lyss, Stanley B PD
456 N New Ballas Rd #220
St Louis, MO 63141
314-567-7337
Lytle, Edwin L PM
6125 Clayton AVe. #201
St. Louis, MO 63139
314-768-3035
MacDonald, Wm C IM
6744 Clayton Rd
St Louis, MO 63117
314-645-8333
MacDonald, Robt R DR
621 S New Ballas Rd
St Louis, MO 63141
314-569-6031
Machefsky, Sidney D R
300 First Capito. Dr.
St. Charles, MO 63301
314-725-3444
Machek, Otakar PM
6744 Clayton Rd
St Louis, MO 63117
314-645-6606
Mackey, Richard L U
533 Couch Suite 181
St. Louis, MO 63122
314-821-0000

Macleod, Angus IM
3555 Sunset Office Dr
St Louis, MO 63127
314-821-3900
Macnish, James M U
229 N. Bompart Ave.
St Louis, MO 63119
Maddipati, Sreedezi AN
3635 Vista Ave. at Grand
P.O.Box 15250
St. Louis, MO 63110
314-577-8750
Madrid, Dominador O GS
2637 Keokuk Bldg. D
St Louis, MO 63118
314-771-9948
Magee, W. Edwin IM
835 South 8th Street
St Louis, MO 63164
314-982-3120
Mahe, Geo A IM
820 S. McKnight Rd.
St. Louis, MO
Maitz, Carlos A OBG
500 Northwest Plaza #425
St. Ann, MO 63074
314-291-2614
Majors, Patrick F IM
950 Francis Pl #107
St. Louis, MO 63105
314-863-7766
Malik, Sarfraz A GE
6434 Chippewa St.
St Louis, MO 63109
314-351-3494
Malmberg, Virgil L P
#8 Kingspointe Ct.
Chesterfield, MO 63005
314-567-5000
Maloney, Robert M U
16 Hampton Village Plz #233
St. Louis, MO 63109
314-351-4433
Manansala, Antonio Q FP
4607 Misty Trail Lane
St. Louis, MO 63128
Mannis, Charles I ORS
522 N New Ballas Rd
St Louis, MO 63141
314-432-2323
Manske, Paul R ORS
One Barnes Hosp Plaza #11300
St. Louis, MO 63110
314-362-4080
Mantovani, John F PD
621 S. New Ballas Rd. #6006
St. Louis, MO 63141
314-569-6515
Maravilla, Levy M GP
4211 Bayless Ave
St Louis, MO 63123
314-638-2448
Marbarger, John P CDS
621 S. New Ballas Rd. #6017
St. Louis, MO 63141
314-560-6070
Marchosky, J. Alex NS
224 S. Woods Mill Rd.
Suite 610
Chesterfield, MO 63017
314-878-2888
Marcus, Morris D D
8227 Balson Ave.
St. Louis, MO 63132
Maret, Christopher R IM
3510 Gravois
St. Louis, MO 63118
314-771-9196

---

*Doctor of osteopathy.

Margolis, Robert P N
11155 Dunn Rd. #202N
St. Louis, MO 63136
314-355-3355

Margolis, David M GE
11155 Dunn Rd.
St. Louis, MO 63136
314-355-4010

Marklin, Gary F IM
12818 Tesson Ferry Rd. #101
St. Louis, MO 63128
314-849-2277

Marre, Joyce E OBG
124S Graham Road Ste 203
Florissant, MO 63031
314-838-1711

Marsh, Jeffrey L PS
400 S. Kingshighway
5t Louis, MO 63110
314-454-6020

Marshall, Jay P IM
224 S. Woods Mill Rd. #500
Chesterfield, MO 63017
314-878-6260

Martin, David S R
14603 Big Timber
Chesterfield, MO 63017
314-S77-8025

Martin, Jeffrey W ORS
3165 McKelvey Rd. #100
Bridgeton, MO 63044
314-344-6900

Martin, Daniel J OBG
621 S. New Ballas Rd. #207
St. Louis, MO 63141
314-432-8505

Martin, Scott A PTH
61S S. New Ballas Rd.
St. Louis, MO 63141
314-569-6120

Martz, John C PD
2940 Devondale Place
5t. Louis, MO 63131

Mass, Joan H IM
243 Dunn Road
Florissant, MO 63031
314-837-0505

Masters, Wm H OBG
24 5. Kingshighway Blvd.
St Louis, MO 63108
314-361-2377

Mathew, Ruby OBG
224 S. Woodsmill Rd. #560
Chesterfield, MO 63017
314-878-2233

Matthews, John G IM
6405 Devonshire
5t. Louis, MO 63109

Maughs, Sydney B P
33 Berry Road Park
St Louis, MO 63122

Maupin, Kathy C OBG
1245 Graham Rd. #408
Florissant, MO 63031
314-838-1300

Maves, Michael D OTO
3635 Vista at Grand
P.O.Box 15250
St. Louis, MO 63110
314-577-8887

Maxson, Katherine A OBG
224 S. Woods Mill Rd. #440S
Chesterfield, MO 63017
314-469-0001

Mayer, Robt A IM
3009 N. Ballas Rd.
Suite #108
St Louis, MO 63131
314-569-3990

Mayes, Ben R DR
12743 Conway Lake
5t. Louis, MO 63141
314-851-2932

Maylack, Fallon H ORS
12255 DePaul Drive Ste 250
Bridgeton, MO 63044
314-739-7654

Mayuga, Edgardo G AN
12474 S. Forty Dr.
St. Louis, MO 63141
314-525-1969

McAdam, C. Rush FP
3928 Canterbury Dr.
St. Louis, MO 63121

McAlister, William H R
510 S Kingshighway
St. Louis, MO 63110
314-454-6139

McBride, Lawrence R TS
St. Louis Univ Hosp
3635 Vista POBox 15250
5t. Louis, MO 63110
314-577-8359

McCadden, Michael E D
621 5. New Ballas Rd.#622
St. Louis, MO 63141
314-567-5711

McCall, Edwin L US
3751 Cedaridge Rd.
Kalamazoo, MI 49008

McCarthy, Christopher IM
9701 Landmark Parkway Dr.
Suite 210
St. Louis, MO 63127
314-842-5211

McClennan, Bruce L DR
510 South Kingshighway
St. Louis, MO 63110
314-362-1053

McCool, James F IM
3915 Watson Rd
5t Louis, MO 63109
314-644-7100

McCown, Allan H R
2639 Miami Luthern Med Ctr.
Dept Radiology
5t. Louis, MO 63118
314-577-5716

McGinnis, Wm F OBG
224 5o. Woods Mill Rd
Suite 450
Chesterfield, MO 63017
314-434-2454

McKinney, Joe K P
777 S New Ballas Rd #234E
5t Louis, MO 63141
314-569-2266

McKinney, John W OTO
3009 N. Ballas Rd. #228
5t. Louis, MO 63131
314-991-0330

McMullin, Forbes A ORS
12615 Old Tesson Road
5t Louis, MO 63128
314-849-0311

McNalley, Michael OBG
2425 Fairoyal Dr.
St. Louis, MO 63131
314-966-1625

McNamara, John J R
6744 Clayton Rd. #206
St. Louis, MO 63117
314-645-2838

Meador, James R GS
36 Oak Park Drive
St Louis, MO 63141

Meadows, C. Douglas OM
777 5 New Ballas Rd #119W
St Louis, MO 63141
314-567-6581

Medler, P. Louis D
621 S. New Ballas Rd. #4017
St Louis, MO 63141
314-567-1291

Medler, John F OBG
621 S. New Ballas #4017
St Louis, MO 63141
314-872-9192

Mehan, Donald J U
1035 Bellevue #406
St Louis, MO 63117
314-644-6767

Mehra, Ravi IM
4590 S. Lindberg
5t. Louis, MO 63127
314-843-3454

Mehra, Usha OBG
4590 S. Lindbergh
St. Louis, MO 63127
314-843-3454

Meinberg, William H OPH
11051 Yolanda
North Ridge, CA 91324

Meiners, Theodore M OBG
224 S. Woods Mill Rd.
Chesterfield, MO 63017
314-576-0930

Meiners, Paul N GS
621 S. New Ballas Rd. #437
5t. Louis, MO 63141
314-993-2930

Meiners, David J GS
621 S. New Ballas Rd. #437
St. Louis, MO 63141
314-993-2930

Mell, Roger L ORS
224 S. Woods Mill Road
Suite 255
Chesterfield, MO 63017
314-434-3240

Melson, G. Leland DR
510 S Kingshighway
St Louis, MO 63110
314-362-1053

Mendelsohn, George E NS
224 S. Woods Mill Rd. #610
Chesterfield, MO 63017
314-878-2888

Mendelsohn, Robert S IM
Associated Internists, Inc
67S Old Ballas Rd. #103
St. Louis, MO 63141
314-S67-1902

Mendelson, David F N
141 N Meramec Ave #317
St Louis, MO 63105
314-726-3202

Mendonsa, Lawrence E OBG
138 Ridgecrest Drive
Chesterfield, MO 63017

Merenda, James T ORS
621 S. New Ballas Rd. #521
St. Louis, MO 63141
314-997-6194

Merenda, Frank J ORS
621 S. New Ballas Rd. #5015
St. Louis, MO 63141
314-567-5850

Merenda, Sam J R
1215 Kings Glen Court
St Louis, MO 63131

Merrims, Theodore OBG
1241 Warson Pines Drive
St. Louis, MO 63132

Merritt, Burch A PD
12937 Timmor Ct
5t Louis, MO 63131
314-383-2953

Mestres, Hugh M PD
10004 Kennerly Rd. #19SB
St Louis, MO 63128
314-849-5010

Meyer, Robert C GS
1035 Bellevue Suite 211
St. Louis, MO 63117
314-644-6300

Meyer, Wayne W GS
12255 DePaul Dr.
Suite 755
Bridgeton, MO 63044
314-739-6060

Meyer, Harry E P
621 5 New Ballas Rd. #4018-B
St. Louis, MO 63141
314-997-3443

Meyer, Jay P
763 S. New Ballas Rd
St Louis, MO 63141
314-S69-0212

Meyer, John S CLP
232 S. Woods Mill Rd.
Chesterfield, MO 63017
314-8S1-2983

Meyer, Melvin E OPH
6651 Chippewa St. #211
St Louis, MO 63109
314-645-4100

Meyerrose, Gary E IM
15402 Manchester Rd.
Ellisville, MO 63011
314-256-0026

Meyers, Elsie F AN
6364 Alexander Dr
5t. Louis, MO 63105

Meyers, John B IM
120 North Forsyth Blvd.
St. Louis, MO 63105

Meyers, Robert W P
4524 Forest Park Blvd #103
St. Louis, MO 63108
314-367-8424

Michael, Vernon E GS
45 Huntleigh Woods
5t Louis, MO 63131

Michaelree, John F FP
921 La Cherie
Ballwin, 63021

Middleton, Jerry N OBG
224 S Woods Mill Road
Suite 750
Chesterfield, MO 63017
314-576-9797

Middleton, Mary A DR
6150 Oakland Ave.
5t. Louis, MO 63139
314-768-3061

Milder, Barry D OPH
2821 N Ballas Rd. #120
5t. Louis, MO 63131
314-432-7010

Milder, Benj OPH
2821 North Ballas 5uite 120
5t Louis, MO 63131
314-432-7010

Miles, Paul W OPH
208 Ambridge Court #206
Chesterfield, MO 63017

Mill, Wm B TR
615 S. New Ballas Rd.
St. Louis, MO 63141
314-569-6844

Millangue, Consolacion IM
8059 Watson Rd
St. Louis, MO 63119
314-961-8206

Miller, Chas IM
12166 Big Bend Blvd
St. Louis, MO 63122
314-821-9150

•Doctor of osteopathy

Miller, Edward J IM
522 N New Ballas Ste 349
St Louis, MO 63141
314-567-3113

Miller, Charles W D
10004 Kennerly Rd.#368-B
St. Louis, MO 63128
314-842-5660

***Miller, Robin C** AN
13610 Barrett Office #105
Ballwin, MO 63021
314-821-8859

Miller, Wm V CLP
4050 Lindell Blvd
St Louis, MO 63108
314-658-2131

Miller, Jule P P
4524 Forest Park Blvd #204
St Louis, MO 63108
314-367-2660

Miller, Geoffrey W R
60 Berkshire Dr.
St. Louis, MO 63117
314-441-6730

Miller, James E OPH
621 S. New Ballas Rd. #5007
St Louis, MO 63141
314-567-0644

Miller, Robert N AN
621 S. New Ballas Road #625
St. Louis, MO 63141
314-569-6987

Milster, Clyde R OPH
7443 Hibbard Lane
St Louis, MO 63123

Minana, Mitchell F AN
14411 Willow Bend Park #4
Chesterfield, MO 63017
314-577-8750

Mirbaha, Mitchell M ORS
4110 Von Talge Rd #102
St Louis, MO 63128
314-894-2404

Mischnick, Carol R PS
10004 Kennerly Rd. #200
St. Louis, MO 63128
314-842-5885

Mishkin, Marvin R ORS
522 N New Ballas Rd #199
St Louis, MO 63141
314-432-2323

Miskovsky, Emil F IM
12303 DePaul Dr. #502
Bridgeton, MO 63044
314-344-6821

Missey, Wilburn C IM
2439 Baxton Way
Chesterfield, MO 63017

Mistry, Tehmton S OBG
369 S. Green Trails Dr.
Chesterfield, MO 63017
314-567-9199

Mohrman, Raymond F IM
12255 DePaul Dr. #460
Bridgeton, MO 63044
314-291-8824

Mohs, Frank R IM
13045 Tesson Ferry Rd.
St. Louis, MO 63128
314-525-5538

Molden, C. Scott IM
3009 N. Ballas Rd. #100
St Louis, MO 63131
314-432-1111

Molden, Chas A FP
3472 Bridgeland Dr. #A
Bridgeton, MO 63044
314-291-8686

Mollman, H. Dennis NS
224 S. Woods Mill Suite 610
Chesterfield, MO 63017
314-878-2888

Monafo, William W GS
4960 Audubon Ave. Box 8109
St. Louis, MO 63110
314-362-5298

Monteleone, Patricia L PD
1465 S. Grand
St. Louis, MO 63104
314-577-5611

Monterubio, Fred R OBG
3009 N. Ballas Rd. #216
St. Louis, MO 63131
314-432-2800

Montes, Arturo C FP
4585 Washington St. Suite C4
Florissant, MO 63033
314-921-4550

Montes De Oca, Julio IM
950 Francis Pl #211
St. Louis, MO 63105
314-726-2828

Montgomery, Austin F IM
18 Southcote Rd.
St. Louis, MO 63144
314-878-3555

Moolsintong, Pornchai R
6420 Clayton Rd.
St. Louis, MO 63117
314-768-8250

Moore, Walter L N
71 Wolfram Road
St. Charles, MO 63303

Moore, Harry G CHP
111 S. Bemiston (602)
St. Louis, MO 63105
314-725-7371

Mora, Alvaro OBG
12255 DePaul Dr. #700
Bridgeton, MO 63044
314-291-5900

Moran, Thos M P
889 S. Brentwood #203
St Louis, MO 63105
314-727-9541

Moran, Christopher J DR
3009 N. Ballas Rd. Ste. 131
St. Louis, MO 63131
314-432-3770

Morey, Kirk P OPH
36 Hart Ave.
St. Louis, MO 63119
314-432-6137

Morgan, Harry C ORS
Rt. 4
Waynesville, MO 65583

Morgan, Stephan S OPH
16 Hampton Village Plz #267
St. Louis, MO 63109
314-351-5330

Morgan, Willy J C U
4601 State
East St. Louis, IL 62205
618-874-6892

Moriconi, William J IM
3535 S. Jefferson Ste 119
St. Louis, MO 63118
314-664-4202

Moritz, Karen L P
141 N. Meramec Ste 108
Clayton, MO 63105
314-721-1626

Moritz, Gerald OTO
12255 DePaul Dr. #790
Bridgeton, MO 63044
314-291-8787

Morley, Mary A OBG
224 S. Woods Mill Rd. #4405
Chesterfield, MO 63017
314-469-0001

Morris, Alan H ORS
522 N New Ballas Rd #199
St Louis, MO 63141
314-432-2323

Morris, R. William IM
10004 Kennerly Rd. Ste 395B
St. Louis, MO 63128
314-849-6066

Morrison, Arlen E IM
244 S. Woods Mill Rd. #370
Chesterfield, MO 63017
314-878-2462

Mortensen, Frede IM
26 Old Westbury Lane
St. Louis, MO 63119
314-821-3900

Morton, David J IM
10004 Kennerly Rd. #137
St. Louis, MO 63128
314-842-0602

Moses, Robert A OPH
7157 Lindell Blvd.
St. Louis, MO 63130

Mosley, Julian C GS
3737 N Kingshighway
St Louis, MO 63115
314-383-0133

Motchan, Dennis G IM
3394 McKelvey Rd. #116
Bridgeton, MO 63044
314-291-3410

Motier, Thomas H PD
16 Hampton Village Plz #243
St. Louis, MO 63109
314-351-2004

Mowrey, Wm O FP
7071 Lindell Blvd.
St Louis, MO 63130

Muchnick, Richard L IM
12494 Tesson Ferry Rd.
St. Louis, MO 63128
314-849-6000

Muckerman, Richard C OBG
621 S. New Ballas Rd. #7003
St. Louis, MO 63141
314-567-5515

Muckerman, Richard I OBG
1314 Log Cabin Lane
St. Louis, MO 63124
314-569-6908

Mueller, Wilbur K R
9645 Big Bend Blvd Rm. 117
St. Louis, MO 63122

Mueller, John J PTH
7300 Christopher Dr.
St. Louis, MO 63129
314-846-9031

Mueller, Clarence E IM
2821 N. Ballas C-15
St Louis, MO 63131
314-872-7332

Mueller, Howard A IM
13 Walker Dr.
Bloomington, IL 61701
815-842-2816

Mueller, Jos A FP
2968 Spring Water Dr.
St Louis, MO 63129

Mueller, Morris A IM
4917 Ravenswood Apt 111
San Antonio, TX 78227

Muhammud, Faquir IM
11155 Dunn Rd
Suite 210 E
St Louis, MO 63136
314-355-6700

Mullarky, Wilbur A IM
704 Tomlinson Terrace
Lake Mary, FL 32746

Mullins, John E IM
222 Woods Mill Rd. South
Suite 630
Chesterfield, MO 63017
314-878-7004

Muncy, Gary A AN
427 Herworth Dr.
Chesterfield, MO 63017
314-227-2726

Murdock, Nathaniel OBG
One Barnes Hosp Pla #16310W
St. Louis, MO 63110
314-361-0313

Murphy, Wm A DR
510 S Kingshighway
St Louis, MO 63110
314-362-2911

Murphy, J. Peter CD
3015 North Ballas Road
St. Louis, MO 63131
314-569-5287

Murphy, Daniel J IM
3394 McKelvey Road
Bridgeton, MO 63044
314-739-5070

Muschany, Norman K OBG
10807 Big Bend Rd.
Kirkwood, MO 63122
314-821-0191

Mustoe, Thomas A PS
One Barnes Hosp Plaza #17424
St. Louis, MO 63110
314-362-7388

Myers, Gary H N
224 S. Woods Mill Rd. #210
Chesterfield, MO 63017
314-878-1110

Myers, Ivan T OBG
3009 N. Ballas Rd. Ste 244
St. Louis, MO 63131
314-567-9199

Nahm, Chung C IM
3535 S. Jefferson Ave #101
St Louis, MO 63118
314-664-2600

Nakra, Rashmi R P
One Barnes Hosp Plaza 16428
St. Louis, MO 63110
314-367-4500

Nakra, Bharat Raj P
1221 S. Grand
St. Louis, MO 63104
314-577-8726

Narayan, Dilip L GE
224 S. Woods Mill Rd. #560
Chesterfield, MO 63017
314-878-8758

Narkiewicz, Lawrence S IM
533 Couch Suite G20
St Louis, MO 63122
314-965-5868

Naseer, Riaz A N
1338 Topping Rd.
St Louis, MO 63131
314-644-6122

Nash, Helen E PD
1441 N Grand
St Louis, MO 63106
314-535-8353

Nash, Homer E PD
3737 N Kingshighway Blvd.
Suite 101
St. Louis, MO 63115
314-261-5250

---

*Doctor of osteopathy.

Naunheim, Keith S TS
3635 Vista at Grand
P.O.Box 15250
St. Louis, MO 63110
314-577-8360

Nayar, Gopal K IM
1023 A4lington Oaks Terrace
Chesterfield, MO 63017
314-567-4174

Near, David M GS
1125 Graham Road
Florissant, MO 63031
314-838-5700

Nelson, Susan J PD
8S15 Delmar #217
Clayton, MO 63124
314-997-7004

Nelson, J. Roger CD
533 Couch Suite G20
St Louis, MO 63122
314-965-5868

Nemec, Edward S R
6500 Chippewa St. #1.
St. Louis, MO 63109
314-351-1140

Nepute, James A R
457 Conway Village Dr.
St. Louis, MO 63141
314-569-6031

Neuman, Neal U
4S6 N New Ballas Rd
St. Louis, MO 63141
314-S67-6071

Newman, Matthew OPH
1034 S. Brentwood Suite 550
St. Louis, MO 63117
314-863-8866

Newport, Gerald OBG
77 Westport Plaza Suite 265
St. Louis, MO 63146
314-878-7333

Newton, Gordon IM
141 N Meramec Suite 202
St Louis, MO 63105
314-725-8580

Nicholas, Stephen P IM
6400 Clayton Rd. Suite 216
St. Louis, MO 63117
314-645-2810

Nicolai, Chas H U
3009 N. Ballas Rd.
Suite 21S
St Louis, MO 63131
314-432-4575

Niedermeyer, George J OBG
4107 Union Rd.
St. Louis, MO 63129
314-894-5575

Nielsen, Carl H AN
660 S. Euclid Ave. Box 80S4
St. Louis, MO 63110
314-362-2324

Niesen, Thomas E GS
224 S. Woods Mill #640
Chesterfield, MO 63017
314-434-1211

Niesen, Anna R IM
411 Gabriel Dr.
St. Louis, MO 63122
314-781-8405

Niesen, Frank J GS
6500 Chippewa #202
St Louis, MO 63109
314-3S2-S193

Nigh, Chas A GS
391S Watson Rd
St Louis, MO 63109
314-644-7100

Nishi, Toshio PTH
3071 Andover Dr.
St. Louis, MO 63121

Nolan, Chas J R
312 Chateaugay
Chesterfield, MO 63017

Noller, Henry W IM
1311 Medinah Dr. SW
Ft. Myers, FL 33907

Nomura, Roy M PTH
13276 Manchester Rd.
St Louis, MO 63131
314-822-0990

Nordlicht, Scott M IM
One Barnes Hosp Plaza #16419
St. Louis, MO 63110
314-367-3734

Norland, Chas C IM
3009 N. Ballas Rd. #100
St Louis, MO 63131
314-432-1111

Nouhan, Joseph G OBG
621 S. New Ballas Rd. #7018
St. Louis, MO 63141
314-432-3723

Nouri, Hassan OBG
12622 Alswell Lane
St Louis, MO 63128
314-842-4000

Novack, Mark A IM
224 S. Woods Mill Rd. #410
Chesterfield, MO 63017
314-878-7220

Nuetzel, John A IM
13309 Conway Road
St. Louis, MO 63141

Nunez, Maria A PD
2821 Ballas Rd Ste 135
St Louis, MO 63131
314-872-3236

Nwaobasi, Sam GS
11277 Ashcroft Lane
St. Louis, MO 63136
314-274-9843

Nyazee, Muhammad A IM
12255 DePaul Dr. #475
Bridgeton, MO 63044
314-389-3333

O'Brien, Robert M ORS
132S Geders Lane
St. Louis, MO 63122

O'Brien, Edward J R
61S0 Oakland Ave
St Louis, MO 63139
314-768-3061

O'Connell, Timothy PS
621 S. New Ballas Rd. #6003
St. Louis, MO 63141
314-991-2151

O'Connor, Robert J FP
2386 North Hwy 67
Florissant, MO 63033
314-837-0030

O'Donnell, Francis E OPH
612S Clayton Ave. #304
St. Louis, MO 63139
314-786-34S6

O'Keefe, Joseph D OBG
533 Couch Ave. #1S2
St. Louis, MO 63122
314-96S-3213

O'Neal, Lawrence W GS
997S Holliston Ct.
St. Louis, MO 63124
314-96S-6100

O'Neal, Patricia L P
One Barnes Hosp Plaza 16428
St Louis, MO 63110
314-367-4500

O'Neil, Jerome H PD
6651 Chippewa #224
St. Louis, MO 63109
314-645-6944

O'Reilly, D. Elliott ORS
27 York Drive
St. Louis, MO 63144

O'Sullivan, Danl F GS
10007 Kennerly Rd
Suite A
St Louis, MO 63128
314-849-2727

Oakley, Margaret M AN
407 Steeple Chase
St Louis, MO 63131
314-965-1567

Ockner, Samuel A IM
C/O Emergency Div SLRMC
SS3S Delmar Blvd.
St. Louis, MO 63112
314-879-6239

Oertli, Robert IM
12494 Tesson Ferry Rd.
St. Louis, MO 63128
314-849-6000

Oetter, Donald L A
950 Francis Place Suite 301
St. Louis, MO 63105
314-726-6707

Oglesby, Richard B OPH
621 S New Ballas Rd
St Louis, MO 63141
314-432-S478

Ohlms, David L P
11745 Olive St. Rd. #205
St Louis, MO 63141
314-567-5011

Ojascastro, Alejandro C FP
4130 S. Grand Blvd #A
St. Louis, MO 63118
314-3S3-2211

Ojile, Joseph M IM
1227 Fernridge Pkwy Ste 110
St. Louis, MO 63141
314-434-9270

Okun, Edward OPH
13 Westwood C Club Grounds
St. Louis, MO 63131

Olk, R. Joseph OPH
One Barnes Hosp Plaza #17413
St. Louis, MO 63110
314-367-1181

Omell, Gary H DR
467 Killearn Lane
St. Louis, MO 63141
314-8S1-2932

Ong, Eng L GS
612S Clayton Ave. #123
St. Louis, MO 63139
314-645-0086

Ong, Ofelia S OBG
1276 White Rd.
Chesterfield, MO 63017
314-842-6443

Onken, Henry D PS
1034 S. Brentwood #750
St Louis, MO 63117
314-727-8484

Oppenheimer, Henry E IM
911 S. Brentwood Blvd. #101
St. Louis, MO 63105
314-725-9656

Orgel, S. Michael IM
100 N. Euclid Ave. #1000
St Louis, MO 63108
314-367-3900

Orsay, Paul K DR
11133 Dunn Rd Rm 1001
St. Louis, MO 63136
314-3SS-S032

Ortbals, David W IM
224 South Woods Mill Rd.
Suite 620
Chesterfield, MO 63017
314-434-8001

Ortiguero, Leopoldo M FP
10S77 Windswept Dr
St Louis, MO 63128
314-892-2066

Ortmeyer, Leroy F IM
11372 Five Oaks Pky.
St. Louis, MO 63128
314-487-6910

Ostapowicz, Tamara L OBG
1035 Bellevue Ave. #208
St. Louis, MO 63117
314-644-6262

Ostapowicz, Frank OBG
3 Hillvale Dr.
St. Louis, MO 63105

Ott, William J OBG
621 S. New Ballas Rd #2009
St. Louis, MO 63141
314-569-6880

Ott, F. Thomas OPH
#22 Algonquin Lane
St. Louis, MO 63119
314-863-8866

Ott, Harold J OBG
1034 S. Brentwood Blvd. #910
St Louis, MO 63117
314-721-7900

Ottolini, James L OBG
222 S. Woods Mill Rd. #360N
Chesterfield, MO 63017
314-S76-1001

Owen, James W IM
2507 Glynnwood Lane
Bartlesville, OK 74006

Owen, Robt F IM
12 Hacienda Dr
St Louis, MO 63124
314-837-3720

Owens, William D OS
One Barnes Hospital Plaza
St Louis, MO 63110
314-362-6976

Ozmat, Orhan M R
4 Ladue Crest Lane
St Louis, MO 63124

Packman, Robt C IM
46S2 Maryland Ave.
St. Louis, MO 63108
314-367-3113

Packman, Paul P
1034 S. Brentwood
Suite 1180
St Louis, MO 63117
314-727-1666

Padilla, Teresita C OBG
224 S. Woods Mill Rd. #430
Chesterfield, MO 63017
314-434-6760

Paez, Mauro A CLP
2040 Concourse Dr.
St. Louis, MO 63146
314-S67-3905

Paine, Robert IM
222 S. Woods Mill Rd. #510
Chesterfield, MO 63107
314-434-8016

Paletta, Victor L IM
12762 Boenker Lane
Bridgeton, MO 63044
314-291-1170

Paletta, Christian E PS
363S Vista at Grand
P.O.Box 152S0
St. Louis, MO 63110
314-S77-8793

•Doctor of osteopathy.

Paletta, Francis X PS
49 Trent Dr.
St. Louis, MO 63124

Paletta, Frank IM
777 S. New Ballas Rd. #311W
St. Louis, MO 63141
314-994-9970

Paletta, Theodore L IM
777 S. New Ballas Rd. #311 W
St. Louis, MO 63141
314-994-9800

Palmer, Stephen M D
1035 Bellevue Ave. #509
St. Louis, MO 63117
314-644-0555

***Palmer, Allen S** OBG
3394 McKelvey
Bridgeton, MO 63044
314-739-8416

Pappalardo, Carlos PS
621 S New Ballas Rd
St Louis, MO 63141
314-567-5620

Pardo, Leopoldo P NS
12639 Old Tesson Ferry Rd.
P.O.Box 22003
St. Louis, MO 63128
314-849-4854

Pardo, Lourdes S PD
25 Black Oak Dr.
St. Louis, MO 63127
314-854-6819

Parikh, Smita S R
11637 West Florissant
Florissant, MO 63033
314-831-4200

Parikh, Sharad P GS
11637 W Florissant Ave.
Florissant, MO 63033
314-831-4200

Paris, Wm H FP
3472 Bridgeland Dr. #a
Bridgeton, MO 63044
314-291-8686

Parker, Thos W IM
7298 Greenway Dr
St Louis, MO 63130
314-863-7766

Parker, Wm D
7629 Cornell
St. Louis, MO 63130
314-725-1640

Parks, Deborah L IM
354
St. Louis, MO 63119
314-367-3113

Parks, Charles GS
675 Old Ballas Rd. #200
St. Louis, MO 63141
314-569-0130

Parra, Raul O U
3635 Vista Ave. at Grand
P. O. Box 15250
St. Louis, MO 63110
314-577-8790

Parsons, Richard P U
224 S Woods Mill Rd #510S
Chesterfield, MO 63017
314-434-3433

Partap, Prabha PTH
8 Dunleith Dr.
St Louis, MO 63131
314-812-0113

Parwatikar, Sadashiv D P
818 Olive St. #1500
St Louis, MO 63101
314-421-4137

Paskar, Larry D R
14337 Stablestone Court
Chesterfield, MO 63017
314-291-0340

Passanante, Bartholomew M GS
15 Kings Lynn
St Louis, MO 63132

Patrick, Roman L PTH
2040 Concourse Dr.
St. Louis, MO 63146
314-872-3717

Payne, Meredith C PS
224 S. Woods Mill Rd. #320
Chesterfield, MO 63017
314-542-0506

Pearlman, Alan L N
517 S Euclid Ave
St Louis, MO 63110
314-362-7814

Pearse, Carlton S OBG
224 S. Woods Mill Rd. #680
Chesterfield, MO 63017
314-576-0930

Pearson, William E OBG
12166 Old Big Bend Rd. #100
St. Louis, MO 63122
314-821-3500

Peck, William A
Washington Univ Sch of Med.
Box 8106 660 S. Euclid
St. Louis, MO 63110
314-362-6827

Peden, Burnet W IM
35 N Central Ave #245
St. Louis, MO 63105
314-721-7210

Peden, Virginia H PD
7350 Drexel Dr.
St. Louis, MO 63130

Pelican, George IM
621 S. New Ballas Rd. #674
St. Louis, MO 63141
314-569-2101

Penilla, Antonio R IM
12255 DePaul Dr. #300
Bridgeton, MO 63044
314-739-1060

Pennell, Richard C GS
621 S. New Ballas #437
St. Louis, MO 63141
314-993-2930

Pennington, D. Glenn GS
3635 Vista At Grand
P.O.Box 15250
St. Louis, MO 63110
314-577-8355

Pennoyer, James OBG
117 Plant Ave.
St. Louis, MO 63119

Pentella, Karen J N
11155 Dunn Rd. #202N
St. Louis, MO 63136
314-355-3355

Pepper, Edward G R
6150 Oakland Ave
St Louis, MO 63139
314-644-4774

Pereira, MaryBeth IM
One Barnes Hosp Plz. #16422
St. Louis, MO 63110
314-367-9595

Perez, Jeannie O PD
12255 DePaul Dr. #280
Bridgeton, MO 63044
314-739-2207

Perez, Robert J IM
8793 Watson Rd.
St. Louis, MO 63119
314-961-9080

Perez, Adamor R GS
4415 Vermillon Dr
St Louis, MO 63128
314-577-5700

Perez, Blanca M PTH
10010 Kennerly Rd.
St. Louis, MO 63128
314-525-1144

Perez, Carlos A R
4511 Forest Park #411
St Louis, MO 63108
314-362-8542

Perez, Romeo J 0BG
3009 N Ballas Rd. #300
St. Louis, MO 63131
314-872-3743

Perkins, David E DR
2344 Hampton Ave.
St. Louis, MO 63139
314-647-2344

Perlstein, Laurence F IM
11642 W. Florissant
Florissant, MO 63033
314-831-6883

Pernoud, Joan M OPH
15 Huntleigh Manor
St. Louis, MO 63131
314-353-0016

Pernoud, Michael F OPH
1027 Bellevue #201
St. Louis, MO 63117
314-644-6666

Pernoud, Flavius G OPH
1027 Bellevue #201
St Louis, MO 63117
314-644-6666

Pernoud, Flavius G OPH
15 Huntleigh Manor
St. Louis, MO 63131
314-567-4224

Peterson, Frederick D PD
8025 Dale Ave
St Louis, MO 63117
314-644-2566

Petkovich, Frank O ORS
224 S. Woods Mill Road
Chesterfield, MO 63017
314-434-6781

Petruska, Paul J IM
367 Conway Lake Dr.
St Louis, MO 63141
314-577-6056

Philip, Varkey E EM
525 Couch Ave
St. Louis, MO 63122
314-966-1528

Phillips, Wm J IM
222 S. Woods Mill Rd. #310
Chesterfield, MO 63017
314-576-6700

Phillips, John J ORS
12255 DePaul Dr. #250
Bridgeton, MO 63044
314-739-7654

Phillips, Abraham M PD
777 S New Ballas Rd #223W.
St. Louis, MO 63141
314-567-9190

Phillips, Daniel N
3009 N. Ballas Rd. #110
St. Louis, MO 63131
314-993-9636

Philpott, Gordon W GS
216 South Kingshighway
St Louis, MO 63110
314-454-7170

Piccione, Leonard N FP
12244 DePaul #325
Bridgeton, MO 63044
314-291-7223

Pickens, Andrew T P
1027 Bellevue
St. Louis, MO 63117
314-768-8920

Picker, Selwyn NS
621 S. New Ballas Rd. #268
St. Louis, MO 63141
314-569-3620

Pignotti, Blase J OBG
621 S. New Ballas Rd.
#560 Tower A
St. Louis, MO 63141
314-993-6401

Pimentel, Esperanza M FP
2323 Chambers
St Louis, MO 63136
314-867-3890

Pineda, Hector O IM
4460 Chippewa St.
St Louis, MO 63116
314-481-8028

Piontek, Jerome G ORS
222 S. Woods Mill #460N
Chesterfield, MO 63017
314-576-7076

Piper, August T IM
4460 Rosalie St.
St. Louis, MO 63115

Pitsinger, N. Bruce GS
232 S. Woods Mill Rd.
Chesterfield, MO 63017
314-434-1500

Pittman, Gerald R PTH
11636 Lackland Rd.
St. Louis, MO 63146
314-991-1311

Pittman, Susan PD
621 S. New Ballas Rd #4006B
St Louis, MO 63141
314-567-0016

Pittmann, Thomas NS
3635 Vista At Grand
P.O.Box 15250
St. Louis, MO 63110
314-577-8795

Plax, Steven I PD
8025 Dale
St Louis, MO 63117
314-644-2566

Poger, Marshall E CLP
40 Hill-N-Dale
St. Louis, MO 63132
314-966-1513

Pohl, David L DR
6150 Oakland Ave. Dept Rad
St. Louis, MO 63139
314-768-3061

Pon, Marcelino FP
10727 Roxanna Dr.
St. Louis, MO 63128
314-677-5711

Popp, Dennis A IM
621 S. New Ballas Rd. #3010
St. Louis, MO 63141
314-569-6020

Porporis, Arthur A R
14009 Woods Mill Cove Dr.
Chesterfield, MO 63017
314-727-0012

Portnoff, Lee S D
3009 N. Ballas Rd. Suite 240
St. Louis, MO 63131
314-993-2909

Post, Stephen L P
4524 Forest Park #201
St Louis, MO 63108
314-361-8333

Potashnick, Robert IM
564 Sarah Lane Apt 307
St. Louis, MO 63141

---

*Doctor of osteopathy.

Potter, Reese H P
10 Wilshire Terr
St. Louis, MO 63119

Potts, Dan E IM
222 S. Woods Mill Rd. #310 N
Chesterfield, MO 63017
314-576-6700

Powell, John A D
1034 S. Brentwood Blvd. #960
St Louis, MO 63117
314-863-7080

Prelutsky, David J IM
311S S. Grand Blvd. #504
St. Louis, MO 63118
314-776-4444

Prensky, Arthur L CHN
400 S. Kingshighway
St Louis, MO 63110
314-454-6085

Presnell, Cleitus A OTO
16751 Pheasant Ct. S.W.
Fort Myers, FL 33908

Price, Hilton I DR
8124 Cornell Ct.
St. Louis, MO 63130
314-344-6350

Probst, Raymond E OBG
10345 Watson Road
St Louis, MO 63127
314-965-6033

Probst, James R OBG
10345 Watson Rd.
St. Louis, MO 63127
314-96S-6033

Probstein, Jacob G GS
1 McKnight Place #304
St. Louis, MO 63124

Prophete, Yves R U
7601 Natural Bridge #102
St. Louis, MO 63121
314-381-3255

Proskey, Vincent J IM
S22 N New Ballas Rd #349
St Louis, MO 63141
314-567-3113

Pruett, Burchard S OS
10321 Richview Dr
St Louis, MO 63127

Pruett, Don S GS
3009 N. Ballas Rd. #235
St. Louis, MO 63131
314-991-4567

Purcell, Harry K GS
9010 Greenridge Dr.
St. Louis, MO 63117

Purcell, John J OPH
6400 Clayton Rd
St Louis, MO 63117
314-647-2277

Puro, Edward A IM
11115 New Halls Ferry #306
Florissant, MO 63033
314-838-0222

Qazi, Nasreen PTH
10010 Kennerly Rd.
St. Louis, MO 63128
314-525-4022

Quadir, Humayum IM
10004 Kennerly Rd #257
St Louis, MO 63128
314-843-3449

Quick, Gary EM
14534 Radcliffeborough Ct.
Chesterfield, MO 63017
314-362-9170

Quick, Richard T P
777 S. New Ballas Rd. #333W
St Louis, MO 63141
314-567-5185

Qureshi, Abdul R IM
10004 Kennerly Road #362B
St Louis, MO 63128
314-843-3110

Rabushka, Sanford E R
11133 Dunn Road #1017
St. Louis, MO 63136
314-653-4001

Rachlin, Maxwell OPH
1S1 Maple St. Box 235
Ellington, CT 06029

Rader, Edward S U
7744 Davis Dr.
St. Louis, MO 63105
314-727-7717

***Radinsky, Stephen** DR
12267 Winrock Dr.
St. Louis, MO 63141
314-434-5936

Raghunandan, Dundoo OPH
135 W. Adams
St. Louis, MO 63122
314-966-2500

Rahman, Moududur OPH
911 S Brentwood #102
St Louis, MO 6310S
314-725-7373

Raichle, Marcus E N
710 Jamaica Ct
St Louis, MO 63122
314-362-6907

Rainey, Robt GS
938S Page Blvd.
St Louis, MO 63114
314-428-8100

Raju, Padma I ON
3635 Vista @ Grand Box 15250
Dept of Rad/Onc
St. Louis, MO 63110
314-S77-8815

Ramirez, Samuel G IM
7449 W. Florissant Ave
St Louis, MO 63136
314-385-9111

Ramirez, Jose A IM
9083 White Haven Dr.
St. Louis, MO 63123
314-768-8000

Ramirez-Inawat, Rebecca C AN
415 Country Oak Dr.
Chesterfield, MO 63017
314-469-0120

Ramsey, Robt H IM
11115 New Halls Ferry Rd
#201
Florissant, MO 63033
314-921-2060

Randolph, Bernard C FP
3737 N Kingshighway #201
St Louis, MO 63115
314-383-1746

Rankin, Diane CHP
717 S. Central
St. Louis, MO 63105
314-721-4688

Rao, Sumati PTH
1111 Tamaron Place
St. Louis, MO 63131

Rao, Aswath N ORS
6901 Chippewa
St. Louis, MO 63109
314-351-1610

Rao, Carlo GS
11639 W. Florissant
Florissant, MO 63033
314-921-6200

Rappold, Henry O OBG
224 S. Woods Mill Rd. #450 S
Chesterfield, MO 63017
314-434-2454

Ratkin, Gary A HEM
4910 Forest Park #202
St Louis, MO 63108
314-361-7786

Raza, Syed A
2216 W. Main St.
Belleville, IL 62223
618-233-1100

Razzaq, A. IM
7S1 St. Francois St.
Florissant, MO 63031
314-838-7000

Reardon, Thos F IM
300 S. Grand
St Louis, MO 63103
314-658-5649

Redington, James C IM
911 S. Brentwood Blvd #208
St Louis, MO 63105
314-727-5336

Rednam, Krishnarao V OPH
135 W. Adams #304
Kirkwood, MO 63122
314-966-2500

Reed, Leslie G FP
10524 Seaton Dr.
St Louis, MO 63137
314-867-9935

Reese, Lester T D
S22 N New Ballas Rd #316
St. Louis, MO 63141
314-567-5873

Reeves, Col., Glen I TR
32 TFS Clinic/SG
APO, NY 09292

Reh, Thos E R
6420 Clayton Rd
St Louis, MO 63117
314-768-8250

Reh, Edward P IM
533 Couch #620
St. Louis, MO 63122
314-965-5868

Reichert, Timothy J OTO
777 S. New Ballas Rd. #129E
St. Louis, MO 63141
314-872-8338

Reinhard, Edward H IM
42 Frederick Lane
St. Louis, MO 63122

Reisler, David M N
224 So Woods Mill Rd.
Suite S50
Chesterfield, MO 63017
314-434-3414

Rejent, Anthony J PD
10004 Kennerly Rd.
Suite 195B
St Louis, MO 63128
314-849-5010

Rendleman, Geo F GS
818 Olive St #1023
St Louis, MO 63101
314-241-9261

Rennard, Marvin OBG
675 Old Ballas Rd. #100
St. Louis, MO 63141
314-872-9206

Repp, Theodore J FP
81 Bellerive Acres
St. Louis, MO 63121

Revels, Harry OPH
317 Medinah Lane
Lompoc, CA 93436

Reyes, Luis A GS
467 Jeffco
Arnold, MO 63010
314-296-1861

Reyes, Jose T AN
45S Steeplechase Lane
St. Louis, MO 63131

Reynolds, James A IM
224 S. Woods Mill Rd. #410S
Chesterfield, MO 63017
314-878-7220

Reynolds, Robert B P
14377 Woodlake Dr. #301
Chesterfield, MO 63017
314-S76-6586

Reynolds, Susan K FP
70 Grasso Plaza Ste G
St. Louis, MO 63123
314-638-0780

Rhee, Seoung E FP
3667 Stoneglen South
Richmond, CA 94806

Rhee, Dong S AN
621 S. New Ballas Rd.
St. Louis, MO 63141
314-872-8221

Ribaudo, J. Michael PS
11709 Old Ballas Rd. #201
St. Louis, MO 63141
314-569-3662

Rich, Keith M NS
660 S. Euclid Ave. Box 8057
St. Louis, MO 63110
314-362-3566

Rich, Margaret M ORS
One Barnes Hosp Plaza #11300
St. Louis, MO 63110
314-362-4080

Richards, Frank O GS
3737 N Kingshighway #206
St Louis, MO 63115
314-383-0133

Richardson, Thomas F P
One Barnes Hosp Plaza 16415
St Louis, MO 63110
314-362-3901

Richmond, Michael R IM
11155 Dunn Rd #205E
St. Louis, MO 63136
314-355-1660

Ridgeway, Wm G OPH
6680 Chippewa 2nd Floor
St. Louis, MO 63109
314-351-0800

Ries, Douglas A GS
1511 Hampton Hall Dr. #12
Chesterfield, MO 63017
314-532-2520

Riley, Louis T OBG
11709 Old Ballas Suite 202
St. Louis, MO 63141
314-567-6580

Riley, John J IM
P. O. Box 835
Bridgeton, MO 63044
314-739-4166

Riner, Ronald N IM
1034 S. Brentwood #854
St. Louis, MO 63117
314-727-9900

Ring, Lisa B D
122S5 DePaul Dr. #845
Bridgeton, MO 63044
314-344-0004

Ring, Edward M TS
621 S. New Ballas Suite 262
St Louis, MO 63141
314-S67-4111

Ritter, Hubert A OBG
1035 Bellevue #208
St. Louis, MO 63117
314-644-6262

Rizzo, Adolfo E CHP
555 N. New Ballas Rd.
Suite 100
St Louis, MO 63141
314-991-2466

•Doctor of osteopathy.

Robben, G. Garry IM
2901 Union Road
St. Louis, MO 63125
314-487-2820
Robbins, Philip L CRS
621 S New Ballas Rd #611-A
St Louis, MO 63141
314-567-9930
Roberts, John P IM
7019 Northmoor Dr.
St. Louis, MO 63105
314-862-4990
Roberts, Harold K IM
434 S. Hanley Rd.
Clayton, MO 63105
Robertson, Frank G OBG
584 Lakeside
Cuba, MO 65453
Robinson, Edith C CHP
2 Briar Oak
St Louis, MO 63132
Roblee, Melvin A OBG
1600 Westbrook %HCC #342
Richmond, VA 23227
Roden, Vernon J PD
456 N New Ballas Rd #304
St Louis, MO 63141
314-567-6868
Rodrigo, Bernardo R AN
923 Town and Country Est Ct.
St. Louis, MO 63141
Rodriguez, Ubaldo R GS
4121 Union Rd. #216
St Louis, MO 63129
314-892-3502
Rogers, H. Bryan FP
819 Locust
St. Louis, MO 63101
314-621-4300
Rohrbaugh, James R CHN
777 S New Ballas Rd.
Suite 330E
St. Louis, MO 63141
314-991-1018
Roitman, Martin J OBG
3394 McKelvey Rd.
Bridgeton, MO 63044
314-739-8416
Rollo, John L PTH
11133 Dunn Rd. #B-103
St. Louis, MO 63136
314-355-2300
Roper, Charles L CDS
One Barnes Hosp Plaza #3108
St Louis, MO 63110
314-362-6916
Rosecan, Marvin IM
6401 W. Main St. #3D
Belleville, IL 62223
618-398-5151
Rosenbaum, Harry D OPH
522 N New Ballas Rd #364
St Louis, MO 63141
314-569-1557
Rosenbaum, Herbert E N
14377 Woodlake Dr. #208
Chesterfield, MO 63017
314-469-3770
Rosenberg, David S IM
2175 Charbonier
Florissant, MO 63031
314-921-4420
Rosenblum, Barry N OTO
6125 Clayton Ave. #430
St. Louis, MO 63139
314-768-3222

Rosenthal, Debra D R
621 S. New Ballas Rd.
St. Louis, MO 63141
314-569-6031
Ross, Wm J PD
119 Church St #227
St Louis, MO 63135
314-521-1600
Roth, John J IM
Town & Country Med. Bldg.
2821 N. Ballas Rd. C-15
St. Louis, MO 63131
314-872-7332
Rothweiler, Robert J OTO
11745 Olive St Rd #103
St. Louis, MO 63141
314-567-3618
Rotskoff, Kenneth S OS
1031 Bellevue Ave. #310
St Louis, MO 63117
314-647-4222
Roulhac, George E NS
269 5th St. POB 386
Sea Island, GA 31561
Rouse, Ernest T IM
1 Robin Hill
St. Louis, MO 63124
Rouse, Ernest T IM
1034 S Brentwood #1040
St Louis, MO 63117
314-721-0666
Roush, Randall D ORS
12255 DePaul Dr. #250
Bridgeton, MO 63044
314-739-7654
***Routsong, Rodney T** NS
77 Westport Plaza Suite 355
St. Louis, MO 63146
314-469-3315
Roy, Tapankumar S TR
3635 Vista @ Grand Box 15250
Dept of Rad/Onc
St. Louis, MO 63110
314-577-8815
Ruehl, Albert F PS
5403 Vicar Ct.
St Louis, MO 63119
314-525-1497
Ruhling, Rudy GP
2645 W. Marion Ave. Unit 511
Punta Gorda, FL 33950
Rumelt, Michael OPH
777 S New Ballas #231E
St. Louis, MO 63141
314-432-2156
Rutherford, James L P
777 S. New Ballas Rd. #331E
St. Louis, MO 63141
314-567-7333
Ruwitch, Joseph F IM
One Barnes Hosp Plaza 16413
St Louis, MO 63110
314-362-7275
Ryall, Jo-Ellyn M P
9216 Clayton Rd. Suite 105
St. Louis, MO 63124
314-993-8649
Ryan, Robt E OTO
2323 Manor Grove Dr. Suite 6
Chesterfield, MO 63017
Sabet, Abdollah A P
15421 Clayton Rd. #G-1
Ballwin, MO 63011
314-227-7300
Sachar, Leo A GS
230 S. Brentwood Blvd. #8E
St Louis, MO 63105
Sachar, Jerome D OBG
675 Old Ballas Rd. #100
St. Louis, MO 63141
314-872-9206

Saghir, Marcel T P
1034 S Brentwood Blvd #880
St Louis, MO 63117
314-862-4448
Saha, Sudha R OBG
12166 Old Big Bend Rd #203
St. Louis, MO 63122
314-822-1688
Saha, Nitai C U
12166 Old Big Bend Rd. #203
St. Louis, MO 63122
314-822-1413
Sakmar, Douglas A PD
10004 Kennerly Rd #195B
St. Louis, MO 63128
314-849-5010
Salanga, Percival B FP
2716 Telegraph Rd. #202
St. Louis, MO 63125
314-892-3501
Sale, Llewellyn IM
4910 Forest Park #312
St Louis, MO 63108
314-367-2757
Salibi, Habbouba
224 South Woods Mill Rd. 222
Chesterfield, MO 63107
314-878-4202
Salinas, Mario OBG
10004 Kennerly Rd.
St Louis, MO 63128
314-849-3500
Salmon, M. L. OPH
2900 Lemay Ferry Rd
St. Louis, MO 63125
314-892-8211
Salvador, Antonio PTH
615 S. New Ballas Rd.
St. Louis, MO 63141
314-569-6120
Samet, John M IM
911 S. Brentwood Blvd. #208
St. Louis, MO 63105
314-727-2575
Sammons, Harry C AN
Rt. 1, Box 188A
% G. Sammons Clifty Rd.
Hermann, MO 65041
314-822-1271
Samson, Barry L ORS
522 N New Ballas Rd. #199
St. Louis, MO 63141
314-432-2323
Samudrala, Ramulu OPH
7520 Natural Bridge #201
St. Louis, MO 63121
314-381-2626
Sanchez, Abelardo B N
3535 S. Jefferson Ave. #111
St. Louis, MO 63118
314-771-8231
Sanders, Theodore E OPH
625 South Skinker
St Louis, MO 63105
Sandza, Joseph G TS
12319 Ironstone Rd.
Des Peres, MO 63131
314-569-5287
Santanello, William M FP
Rt. 3 Box 369F
Town Hall Rd.
Belleville, IL 62223

Santillano, Antonio B PTH
6150 Oakland Ave.
St Louis, MO 63139
314-768-3253

Sasser, Wm F TS
621 S New Ballas Rd #542
St Louis, MO 63141
314-567-1841

Sata, Lindbergh S P
1221 S. Grand #212
St. Louis, MO 63104
314-577-8720
Sato, Richard W PD
777 So. New Ballas Rd.#114E
St. Louis, MO 63141
314-432-3338
Sato, Geo PD
777 S. New Ballas Rd. 114E
St Louis, MO 63141
314-432-3338
Sauer, Donald C GS
4910 Forest Park #314
St Louis, MO 63108
314-361-1142
Sauvage, Jacques P OBG
4911 Barnes Hosp Plaza #8064
St Louis, MO 63110
314-362-3169
Savci, Hasan D. R
11712 Westham
St Louis, MO 63131
314-291-0340
Sawyer, James OBG
2520 N. Geyer Rd.
St. Louis, MO 63131
Schaberg, Kevin B OBG
224 S Woods Mill Rd #720 S
Chesterfield, Mo 63017
314-576-6166
Schaefer, Glennon S GS
621 S. New Ballas Rd. #242
St Louis, MO 63141
314-872-3188
Schaerer, Jacques P NS
777 S New Ballas Rd #112W
St Louis, MO 63141
314-567-5078
Schanzlin, David J OPH
3655 Vista Ave.
St. Louis, MO 63110
314-577-8265
Schaper, Ernest H FP
7200 Manchester Ave
St. Louis, MO 63143
314-645-7744
Scheele, Paul M IM
5479 Kenrick Park Drive So.
St. Louis, MO 63119
Scheer, George E ORS
53 Berkshire Drive
St. Louis, MO 63117
Scheff, Robert J IM
3009 N. Ballas Rd.
St. Louis, MO 63131
314-432-1311
Scheibe, Robert G U
3009 N. Ballas Rd.
St. Louis, MO 63131
314-567-3235
Scheible, Robert F DR
3009 N. Ballas Ste.131
St Louis, MO 63131
314-432-3770
Schengber, John S P
777 S. New Ballas Rd. #333W
St Louis, MO 63141
314-567-5185
Scheu, James H PS
70 Jungerman Circle #102
St. Peters, MO 63376
314-441-7220
Schierman, Wm D IM
911 S. Brentwood Blvd. #208
St. Louis, MO 63105
314-862-4141
Schlafly, Edward F ORS
224 So Woods Mill Rd #330S
Chesterfield, MO 63017
314-576-7013

---

*Doctor of osteopathy.

Schlafly, Bruce S ORS
10004 Kennerly Rd. #259-B
St. Louis, MO 63128
314-842-2200
Schlansky, Seymour M PD
2730 Highway 94 South #200
St. Charles, MO 63303
314-441-5437
Schmid, Tania L IM
1404 Peacock Lane
Brentwood, MO 63144
314-534-8220
Schmidt, Dennis A R
6150 Oakland
St Louis, MO 63139
314-768-3068
Schmidt, Martin P PD
6651 Chippewa Suite 224
St. Louis, MO 63109
314-645-6944
Schmidt, Edwin H P
10240 Schuessler Rd.
St Louis, MO 63128
Schmidt, Edwin H IM
1035 Bellevue Ave #502
St Louis, MO 63117
314-645-3400
Schneider, Sally L AN
1001 Craig Rd. #174
St. Louis, MO 63146
314-569-2688
Schneider, Robert J IM
Associated Internists, Inc.
675 Old Ballas Rd. #103
St. Louis, MO 63141
314-567-1902
Schneider, Paul G IM
6400 Clayton Rd. #201
St. Louis, MO 63117
314-781-8405
Schoch, Lawrence H OPH
Midwest Regional Retina, Ltd
1245 Graham Rd. #107
Florissant, MO 63031
314-839-1211
Schoeck, Albert F AN
14013 Baywood Village Dr.
Chesterfield, MO 63017
Schoenecker, Perry L ORS
400 S. Kingshighway #5W18
St. Louis, MO 63110
314-454-6164
Schoentag, John S D
777 S. New Ballas Rd.
Suite 302-W
St. Louis, MO 63141
314-567-3180
Schonfeld, Gustav IM
4566 Scott Ave. Box 8113
St Louis, MO 63110
314-362-7038
Schopp, Alvin C ORS
12345 Gaillard Dr.
St Louis, MO 63141
Schranck, Chas R AN
6420 Clayton Rd.
St. Louis, MO 63117
314-768-8300
Schreiber, David J N
2 St. Anthonys Way #103
Alton, IL 62002
618-465-0630
Schrick, Richard E OTO
220 W. Argonne -Ste 100
St. Louis, MO 63122
314-966-5252
Schuessler, Edward C AN
P. O. Box 31696
St. Louis, MO 63131
314-966-1500
Schuessler, Wolfgang P IM
6744 Clayton Rd #311
St Louis, MO 63117
314-644-1901
Schuh, Marlys E GS
675 Old Ballas Rd. #200
Creve Coeur, MO 63141
314-569-0130
Schulman, Jeffrey I PDA
456 N. New Ballas #129
St. Louis, MO 63141
314-569-1881
Schultz, Irwin IM
26 Arundel Pl
St Louis, MO 63105
314-355-5300
Schultz, Earl R N
3009 North Ballas Rd.
Suite 209
St Louis, MO 63131
314-567-3663
Schulz, Richard C R
6150 Oakland
St Louis, MO 63139
314-768-3061
Schwartz, Henry G NS
660 S. Euclid Ave. Box 8057
St. Louis, MO 63110
314-362-3575
Schwartz, Melvin M OBG
675 Old Ballas Rd. #100
St. Louis, MO 63141
314-872-9206
***Schwarze, Robert F** D
1120 Graham Rd.
Florissant, MO 63031
314-831-2464
Schweiss, John F AN
3635 Vista At Grand
P. O. Box 15250
St. Louis, MO 63110
314-577-8750
Schweitzer, James M IM
3009 N. Ballas #100
St. Louis, MO 63131
314-432-1111
Scott, Elwin P GP
237 Central
St. Louis, MO 63119
Scully, Thomas F U
911 S. Brentwood #228
St. Louis, MO 63105
314-725-6551
Sedgwick, William G ORS
1034 S. Brentwood #650
St. Louis, MO 63117
314-721-7325
Seed, John C P
6400 Clayton Road
Suite 412
St Louis, MO 63117
314-647-9100
Seeley, James J GS
10004 Kennerly Rd.
Suite 355
St Louis, MO 63128
314-849-3050
Seib, George A FP
2323 Lafayette Ave
St Louis, MO 63104
Selhorst, John B P
3635 Vista At Grand
P.O. Box 15250
St. Louis, MO 63110
314-577-8026
Senturia, Hyman R R
216 S. Kingshighway
St Louis, MO 63108
314-454-7230
Sertl, George O ORS
3009 N. Ballas Road #105
St Louis, MO 63131
314-569-0612
Sertl, James F IM
950 Francis Pl
St Louis, MO 63105
314-863-7766
Sessions, Donald G OTO
517 S. Euclid Ave.
St. Louis, MO 63110
314-362-7523
Sexton, Daniel L IM
14 Crestwood Dr.
St. Louis, MO 63105
Shah, Modaser P
2694 Victron Dr.
St. Louis, MO 63129
314-644-8000
Shah, Anwar OPH
1027 Bellevue Ave
St Louis, MO 63117
314-644-6800
Shah, Jitendra P U
10004 Kennerly Rd
St. Louis, MO 63128
314-849-2735
Shahan, Philip T OPH
211 N Meramec #301
St Louis, MO 63105
314-726-0053
Shaikun, Gerald L R
2100 Madison AVe.
Granite City, IL 62040
618-621-3378
Shanahan, Philip J GP
1 Chilton Ln
St. Louis, MO 63141
314-567-3752
Shands, Courtney GS
456 N. New Ballas Rd. #346
St. Louis, MO 63141
314-567-6071
Shaner, Thomas P OBG
2821 North Ballas #165
St Louis, MO 63131
314-872-7400
Shank, Robert E IM
1325 Wilton Lane
St Louis, MO 63122
Shapiro, Herbert N GS
6651 Chippewa St #312
St Louis, MO 63109
314-781-4311
Shapiro, Susan J R
4939 Audubon Ave.
Box 8131 #5500
St. Louis, MO 63110
314-362-8566
Shapleigh, John B IM
222 S. Woods Mill Rd. #580
Chesterfield, MO 63017
314-469-0262
Sharp, Austin R PD
15421 Clayton Rd.
Ballwin, MO 63011
314-391-6300
Shatz, Burton A IM
10287 Clayton Rd #200
St Louis, MO 63124
314-997-0554
Shaw, Richard C TS
11155 Dunn Rd.
St Louis, MO 63136
314-355-4571
Sheehan, Paul J GS
12255 DePaul #830
Bridgeton, MO 63044
314-291-6556
Sheffner, Paul W P
763 S. New Ballas Rd. #350
St. Louis, MO 63141
314-569-0212
Shehadi, Sameer I PS
3635 Vista at Grand
P.O. Box 15250
St. Louis, MO 63110
314-577-8793
Shelton, Earl W IM
4451 Natural Bridge Ave #101
St Louis, MO 63115
314-385-8752
Shelton, Becky R OBG
3009 N. Ballas Suite 130
St. Louis, MO 63131
314-569-0505
Shen, Jerome T PD
7132 Kingsbury Blvd.
St Louis, MO 63130
Shen, Hang C R
14907 Greenleaf Valley Dr.
Chesterfield, MO 63017
314-854-6472
Shen, Anthony S IM
12632 Conway Club Ct.
St. Louis, MO 63141
314-569-5341
Shen, Winston W P
1221 S. Grand Blvd.
St. Louis, MO 63104
314-577-8728
Sheridan, John J ORS
6400 Clayton Rd. #302
St Louis, MO 63117
314-647-8562
Sherman, W. Gary PD
13131 Tesson Ferry Rd. #105
St Louis, MO 63128
314-849-3320
***Sherrod, Glenn M** N
12255 DePaul Dr.
Suite 770
Bridgeton, MO 63044
314-291-2446
Sherwin, Charles S GS
3971 Flora Place
St. Louis, MO 63110
Shieber, Wm GS
4910 Forest Park Ave. #206
St. Louis, MO 63108
314-361-3676
Shields, John B R
3635 Vista at Grand
P. O. Box 15250
St. Louis, MO 63110
314-577-8025
Shine, Thomas E GS
11155 Dunn Rd. Suite 303
St. Louis, MO 63136
314-741-3400
Shitut, Ravindra V ORS
12615 Old Tesson Rd.
St. Louis, MO 63128
314-849-0311
Shively, Raymond E PS
10004 Kennerly Ste 374B
St. Louis, MO 63128
314-849-5151
Shively, Robert A ORS
One Barnes Hosp Plaza 11300
St. Louis, MO 63110
314-362-4080
Shore, Bernard L IM
4652 Maryland
St. Louis, 63108
314-367-3113

---

*Doctor of osteopathy.

Short, Charles D PTH
3015 N. Ballas Rd.
St. Louis, MO 63131
314-569-5207

Shroff, Kumkum OBG
533 Couch Ave. #155
St. Louis, MO 63122
314-965-2215

Shuman, Robert B IM
4652 Maryland Ave.
St. Louis, MO 63108
314-367-3113

Shuman, Joseph S P
12255 DePaul Dr. #440
Bridgeton, MO 63044
314-739-5557

Shyken, Herman R
456 N New Ballas Rd.
St. Louis, MO 63141
314-567-1656

Sicard, Gregorio A GS
One Barnes Hosp Plaza #5103
St. Louis, MO 63110
314-362-7841

Siddiqui, Farzanna Q P
875 Haller St.
Woodriver, IL 62095
618-876-3600

Siegel, Barry A NM
510 S. Kingshighway Blvd.
St. Louis, MO 63110
314-362-2809

Siemers, Geo E OBG
242 Worthing Dr.
St. Louis, MO 63119

Siesener, Herbert H IM
1301 Hollins Dr.
St. Louis, MO 63135

Sigmund, Charles J IM
1400 Lemay Ferry Rd. #101
St. Louis, MO 63125
314-544-5005

Sigmund, Charles A OPH
12255 DePaul Rd
Bridgeton, MO 63044
314-739-9293

Silber, Sherman J U
224 South Woods Mill Rd.
Suite 730
Chesterfield, MO 63017
314-576-1400

Silver, Bernd OPH
950 Francis Place #317
St Louis, MO 63105
314-727-5510

Silverberg, Charles IM
505 Coeur De Royale #403
St. Louis, MO 63141

Simon, Nathan M P
4524 Forest Park Blvd.
St. Louis, MO 63108
314-361-7817

Simon, David L PD
9705 Watson Rd. #207
St. Louis, MO 63126
314-966-0626

Simons, Paul S PD
4570 Audubon
St Louis, MO 63110
314-658-5243

Simpson, Joseph R
4939 Audubon #5500
St. Louis, MO 63110
314-362-8516

Simril, Wayne A DR
21 Somerset Downs
St Louis, MO 63124

Singer, Jonas R
1521 Pepperwood Dr.
St. Louis, MO 63146
314-362-2928

Sisk, James C D
141 Frontenac Forest
St. Louis, MO 63131

Sislen, Donald R IM
621 S New Ballas Rd #460
St Louis, MO 63141
314-432-3456

Sisson, Richard G GS
4910 Forest Park Blvd. #206
St Louis, MO 63108
314-361-3676

Skimming, W. Lee ORS
621 S. New Ballas Suite 43
St. Louis, MO 63141
314-872-8015

Skinner, John S IM
31 Willow Hill Rd.
St. Louis, MO 63124

Skor, Donald A END
One Barnes Hospital #17416
St. Louis, MO 63110
314-362-5100

Sletten, Ivan W P
11155 Dunn Rd #114N
St Louis, MO 63136
314-355-1244

Slocum, Stephen G OPH
1034 S. Brentwood
Suite 694
St. Louis, MO 63117
314-721-8250

Smiley, William L OBG
#7 Windermere Place
St. Louis, MO 63112
314-381-2741

Smit, Herbert M OTO
8724 W Kingbury
St. Louis, MO 63124

Smith, Hugh R OBG
5105 Melitta Dr.
St. Louis, MO 63128

Smith, Kathleen P
RR 1, Box 312
DuQuoin, IL 62832

Smith, Morton E OPH
660 S Euclid St
St Louis, MO 63110
314-362-5722

Smith, Kenneth R NS
3635 Vista Ave. At Grand
P. O. Box 15250
St. Louis, MO 63110
314-577-8797

Smith, Benj F OBG
3009 N. Ballas Rd. Ste 244
St. Louis, MO 63131
314-567-9199

Smith, Dermott A P
1221 S Grand Blvd #232
St. Louis, MO 63104
314-577-8724

Smith, Emily L DR
510 S Kingshighway
St Louis, MO 63110
314-362-2823

Smith, Garland F ORS
9047 Monmouth Drive
St. Louis, MO 63117

Smith, Herbert P GP
2265 Florida Mango Rd
West Palm Beach, FL 33406

Smith, James B P
110 S Central Ave #400
St Louis, MO 63105
314-862-6007

Smith, Peter G OTO
621 S. New Ballas Rd.
St. Louis, MO 63141
314-432-5151

Smith, Robert W R
10010 Kennerly Rd
St Louis, MO 63128
314-525-1155

Sobky, George H DR
2305 W. Georgia
Louisiana, MO 63353
314-745-5533

Sohn, Richard N
One Barnes Hosp Plaza 17303
St Louis, MO 63110
314-361-7177

Solanki, Nareshkumar J PD
600 Medical Dr. #202
Wentzville, MO 63385
314-327-5732

Solomon, Felix G AN
11326 Mosley Lane
St. Louis, MO 63141

Sommer, Conrad S P
2 Tamarack Drive
St. Louis, MO 63124
314-993-5981

Sommer, Ross B IM
1034 S Brentwood St #1050
St Louis, MO 63117
314-721-0666

Soorya, Narendir T P
6651 Chippewa #315
St. Louis, MO 63109
314-644-2395

Sopuch, John A OBG
500 Northwest Plz #523
St. Ann, MO 63074
314-739-8500

Sosna, Jacob P IM
911 S. Brentwood Blvd #330
St. Louis, MO 63105
314-725-2100

Soto, Albert A P
522 N New Ballas Rd #317
St Louis, MO 63141
314-567-1958

Spadaro, James J CD
10004 Kennerly Rd. Ste 171-B
St. Louis, MO 63128
314-843-1660

Spalding, Donald G R
621 S New Ballas Rd #23
St. Louis, MO 63141
314-569-6031

Spector, Gene W R
216 S. Kingshigway Blvd.
St. Louis, MO 63110
314-454-7230

Spector, Gershon OTO
4911 Barnes Hospital Plaza
St Louis, MO 63110
314-362-7509

Spencer, Jean F OPH
537 Warren Ave.
St. Louis, MO 63130

Speno, Angelo A OM
11815 Point Oak Dr.
St. Louis, MO 63131

Spernoga, John F IM
911 S. Brentwood #208
St. Louis, MO 63105
314-725-0539

Spewak, Robert D PD
9845 Wild Deer Road
St. Louis, MO 63124
314-645-6944

Spivack, Alan R IM
224 S. Woods Mill Rd. #620
Chesterfield, MO 63017
314-434-8001

Spoeneman, Marlin C GP
1155 Hillsboro Mile #608
Hillsboro Bch, FL 33062

Spray, Thomas L GS
400 S. Kingshighway SteSW24
St. Louis, MO 63110
314-454-6165

Spurgeon, Stephen EM
1031 Bellevue Ave. #300
St. Louis, MO 63117
314-781-2252

Spurrier, Mark H OPH
1034 S. Brentwood #550
St. Louis, MO 63117
314-863-8866

Squitieri, Alphonse J IM
9616 Lackland Rd.
St. Louis, MO 63114
314-427-1855

Srisuro, Chotchai OBG
533 Couch Ave #287
St. Louis, MO 63122
314-821-9144

Srivisal, Somnuk R
6420 Clayton Rd.
St. Louis, MO 63117
314-768-8250

Stafford, Walter R OPH
141 N Meramec Ave #201
St. Louis, MO 63105
314-725-1067

Starke, Keith M IM
9701 Landmark Parkway Dr.
Suite 210
St. Louis, MO 63127
314-842-5211

Starkloff, Gene B GS
5266 Westminster Pl
St Louis, MO 63108

Stavrides, Pete D ORS
11140 S. Towne Sq.
St. Louis, MO 63123
314-487-8008

Steele, Jack T FP
3466 Bridgeland
Suite 110
Bridgeton, MO 63044
314-291-6660

Steiling, Sylvia A GS
10007 Kennerly Rd.
St. Louis, MO 63128
314-849-2727

Stein, Harry J FP
2304 Hord Ave.
St. Louis, MO 63136

Steinberg, Franz U PM
216 South Kingshighway
St Louis, MO 63110
314-454-7756

Steiner, Alexander J IM
8 County Aire
St. Louis, MO 63131

Steinhardt, George F U
1465 S. Grand Blvd.
St. Louis, MO 63104
314-577-5334

Stephen, C. Ronald AN
15801 Harris Ridge Court
Chesterfield, MO 63017

Sterkel, Richard L IM
1035 Bellevue
St. Louis, MO 63117
314-644-6161

Stevens, Julia C OPH
159 Hammel Ave.
St. Louis, MO 63119
314-362-3740

---

*Doctor of osteopathy.

Stewart, C. Tinsley PMR
SSM Rehab Inst 6th Floor
6420 Clayton Rd.
St. Louis, MO 63117
314-768-5229

Stewart, L. Paul OPH
8 Broadview Farm Road
St. Louis, MO 63141
314-381-8584

Stickle, Arthur W OPH
135 W Adams
St. Louis, MO 63122
314-821-0500

Stickley, Louis P CD
621 S New Ballas Rd
5t Louis, MO 63141
314-569-6168

Stillings, Wayne A P
1034 S Brentwood #516
St. Louis, MO 63117
314-721-8242

Stith, John A PD
1465 5. Grand Blvd.
St. Louis, MO 63104
314-577-5675

Stohr, Paul E NS
1035 Bellevue Ave #310
5t Louis, MO 63117
314-644-6565

Stokes, James M GS
7121 Washington Ave.
5t. Louis, MO 63130

Stoliar, Bruce EM
2110 Crystal Drive
5t. Louis, MO 63131

Stoneman, William GS
1402 S Grand Blvd
St Louis, MO 63104
314-577-8201

Strecker, William B ORS
One Barnes Hosp Plz #2104
5t. Louis, MO 63110
314-362-7247

Strickland, James C ORS
621 So New Ballas Rd #297C
5t. Louis, MO 63141
314-569-6630

Strobach, Kurt F OBG
621 S. New Ballas Rd. #4017
5t. Louis, MO 63141
314-872-9192

Stronach, Linda L IM
1035 Bellevue Ave. Suite 316
St. Louis, MO 63117
314-644-3250

Stronsky, David ORS
621 S. New Ballas Rd. #50
St Louis, MO 63141
314-872-8380

Stroud, Malcolm H OTO
522 N. New Ballas #206
St. Louis, MO 63141
314-432-4110

Stryker, William I P
1 Gulf Manor
Venice, FL 34285

Stuebner, Roland W GS
12215 NE 128th St. #327
Kirkland, WA 98034

Sudekum, Joseph M ORS
621 S. New Ballas Rd. #53
St Louis, MO 63141
314-569-1212

Sudholt, Alfred F OBG
14077 Baywood Village Dr.
Chesterfield, MO 63017
314-291-2614

Sueper, Robert H PTH
2040 Concourse Dr.
St. Louis, MO 63146
314-872-7144

Sullivan, Clement J IM
6744 Clayton Rd Rm 311
5t Louis, MO 63117
314-644-0151

Sullivan, William W IM
12166 Big Bend Blvd #200
St. Louis, MO 63122
314-821-9150

Sullivan, Wm K GPM
#23 Conway Lane
St. Louis, MO 63124
314-879-6307

Sumer, Emel A CHP
3394 McKelvey Rd. #114
Bridgeton, MO 63044
314-291-6135

Sumer, Cengiz M P
3394 McKelvey Rd. #114
Bridgeton, MO 63044
314-291-6135

Summers, Thomas F GP
921 E. North Ave.
Olney, IL 62450

Summers, John B PD
12658 Alswell Lane
St. Louis, MO 63128

Sundaram, Murali
3635 Vista at Grand
P.O.Box 15250 .
St. Louis, MO 63110
314-577-8025

Sundermann, Richard H P
3009 N. Ballas Rd. #227
St. Louis, MO 63131
314-567-5000

Sunshine, Herbert U
456 N New Ballas
5t Louis, MO 63141
314-567-6071

Sutherland, Charles J ORS
One Barnes Hosp Pl #11300
St. Louis, MO 63110
314-362-4080

Sutter, Richard A OM
7215 Greenway Dr.
St Louis, MO 63130
314-621-4300

Suwannasri, Rudee IM
950 Francis Place #200
St. Louis, MO 63105
314-727-1992

Svancarek, William P EM
11133 Dunn Rd. #B220
St. Louis, MO 63136
314-355-2300

Swaykus, Bernard T IM
3394 McKelvey Rd. #116
Bridgeton, MO 63044
314-291-3410

Swope, Joseph A IM
9242 Grant Farm Tr.
St. Louis, MO 63126
314-883-5741

Sylvanovich, W. Richard GE
621 5. New Ballas Ste.3008
5t. Louis, MO 63141
314-569-6973

Szoko, Edward R
10010 Kennerly Rd.
St. Louis, MO 63128
314-525-1155

Tailor, Chandrakant C R
11133 Dunn Rd. #1001
St. Louis, MO 63136
314-355-5032

Talwar, Tara IM
430 Whitree Lane
Chesterfield, MO 63017
314-576-7770

Tanaka, Geo M IM
5611 5utherland
St Louis, MO 63109

Tanphaichitr, Kongsak IM
12166 Royal Valley Dr.
5t. Louis, MO 63141
314-839-4339

Tashma, Sigmund S US
601 S. Meramec
Clayton, MO 63105

Tatkow, Robert W ORS
456 N New Ballas
5uite 369
St Louis, MO 63141
314-569-1830

Taute, Hermann OBG
12040 Heatherdane Dr.
St. Louis, MO 63131
314-872-8636

Taylor, Eugene D OBG
2715 N Union #110
St. Louis, MO 63113
314-385-5550

Tayob, Anver A ORS
6400 Clayton Rd. #110
St. Louis, MO 63117
314-645-6051

Tekwani, Hiralal T OPH
9911 Kennerly Road
5t Louis, MO 63128
314-842-2020

Tepper, Arnold IM
777 S New Ballas Rd
St Louis, MO 63141
314-432-1128

Ternberg, Jessie L PDS
400 S. Kingshighway 5te 5W12
St Louis, MO 63110
314-454-6022

Terschluse, David A GS
12255 DePaul Dr.
Bridgeton, MO 63044
314-291-8130

Tess, Melvin J PH
1501 Switzer Ave
St Louis, MO 63147

Tess, Allen F OPH
1245 Graham Rd #411
Florissant, MO 63031
314-837-3667

Tessier, John E ORS
621 S. New Ballas Rd. #329
St. Louis, MO 63141
314-432-7133

Thale, Thomas R P
351 Meadowbrook Drive
Ballwin, MO 63011

Thawley, Stanley E OTO
4911 Barnes Hospital Plaza
5t Louis, MO 63110
314-362-7524

Thiel, J. Allen A
621 S New Ballas Rd #368
# 368
St Louis, MO 63141
314-872-7958

Thiele, Belmont R GS
6862 W. Baile Rd.
Las Vegas, NV 89102

Thierauf, Charles G R
9444 5unny Creek
St Louis, MO 63127
314-569-6031

Thoma, George E IM
5 Georgian Acres
St. Louis, MO 63131

Thomas, Matthew A OPH
1 Barnes Hosp Plaza #17413
St. Louis, MO 63110
314-367-1181

Thomas, J. Regan PS
4911 Barnes Hosp plz
St. Louis, MO 63110
314-362-7529

Thomasson, Jeffrey L DR
621 S. New Ballas Rd.
5t. Louis, MO 63141
314-569-6865

Thomasson, Robert E GS
935 Terrill Farms Rd.
5t. Louis, MO 63124
314-837-3721

Thomasson, Mary W R
935 Tirrill Farms Rd.
5t. Louis, MO 63124
314-837-3720

Thompson, M. Bryant OBG
224 5outh Woods Mill Rd.
#720
Chesterfield, MO 63017
314-576-6166

Thurmann, Manfred IM
6400 Clayton Road 5uite 212
5t Louis, MO 63117
314-645-6450

Tichenor, Robert W FP
175 Misty Manor Rd.
Fenton, MO 63026

Tiefenbrunn, Sharon F D
6651 Chippewa
5uite 319
St. Louis, MO 63109
314-781-0794

Tillinghast, Jeffrey P IM
10287 Clayton Rd. #200
5t. Louis, MO 63124
314-997-2707

Tillman, Mary A PD
W Florissant at Lucas & Hunt
330 Northland Off Bldg
5t. Louis, MO 63136
314-385-5522

Tindall, Robert N OTO
2300 Indian Hills Dr. #3-232
5ioux City, IA 51104

Tippett, Jack C ORS
7709 Cloverlea Dr
5t. Louis, MO 63123
314-658-5702

Tobey, Albro C OBG
777 S. New Ballas Rd. #100
5t. Louis, MO 63141
314-567-7303

Tobler, Jerry DR
3009 N. Ballas Rd. Suite 131
5t. Louis, MO 63131
314-432-3770

Tobler, Randall W OBG
911 5. Brentwood 5uite 325
Clayton, MO 63105
314-721-8852

Tominack, Rebecca L IM
Monsanto
800 N. Lindbergh A3NB
St. Louis, MO 63167
314-694-4572

Torin, Bernice A OBG
951 Old Bonhomme
St Louis, MO 63132

Torrence, Ralph J U
224 S. Woods Mill Rd.
Chesterfield, MO 63017
314-434-3433

Totty, William G R
510 S. Kingshighway
St. Louis, MO 63110
314-362-2916

•Doctor of osteopathy.

Treiman, Robt C IM
7 Radnor Rd
St Louis, MO 63131

Triska, Roland A PD
533 Couch
St. Louis, MO 63122
314-966-3324

Troop, Bryan R GS
621 S. New Ballas Rd. #1017
St. Louis, MO 63141
314-569-6440

Trotta, Philip C DR
898 Durrow Drive
St. Louis, MO 63141
314-441-6730

Trotter, Francis O R
112 Walnut Drive
Carrollton, MO 64633

Trotter, John L N
660 S. Euclid
St. Louis, MO 63110
314-362-3293

Trueblood, Alva C OBG
731 N. Taylor
St Louis, MO 63122

Trugly, Edith S P
777 S. New Ballas Rd. #212W
St. Louis, MO 63141
314-569-0811

Tschudin, Garland PD
6651 Chippewa St. #202
St. Louis, MO 63109
314-644-2727

Tsifutis, Argyrios A PD
3434 Bridgeland Dr.
Bridgeton, MO 63044
314-291-4994

Tucker, Geo L GS
224 S. Woods Mill Rd.
# 670
Chesterfield, MO 63017
314-434-3031

Tucker, Robert E ORS
533 Couch Ave. #220
St. Louis, MO 63122
314-966-0111

Tucker, Dolores R D
224 S. Woods Mill Rd.
Chesterfield, MO 63017
314-878-2556

Turgeon, Ronald P PTH
57 Lake Forest
St. Louis, MO 63117
314-768-8201

***Turner, Timothy T** FP
13523 Weston Park Dr.
St. Louis, MO 63131
314-576-6039

Tuteur, Peter G IM
4960 Audubon Ave.
St. Louis, MO 63110
314-362-6905

Twedell, Donald L OM
6670 Estero Blvd #502A
Fort Myers Bch, FL 33931

Uchiyama, Robert C IM
224 S. Woods Mill Road #410S
Chesterfield, MO 63017
314-878-7220

Uhlemeyer, Henry A OTO
12017 Point Oak Rd.
St Louis, MO 63131

Ulett, Pearl C CHP
6484 Clayton Ave.
St. Louis, MO 63139
314-645-0860

Ungvari, Jos C GS
6500 Chippewa Ste 107
St Louis, MO 63109
314-351-1480

Vacca, Jos B IM
1489 Minmar Drive
St. Louis, MO 63122

Vadlamani, S. M. GS
6651 Chippewa
St Louis, MO 63109
314-781-1580

Vafi, Houshang P
3125 Lemay Ferry Rd.
St Louis, MO 63125
314-892-4555

Valach, Frank J OBG
4 Nassau Circle
St. Louis, MO 63146

Valtierra, Cesar A P
950 Francis Place #112
Clayton, MO 63105
314-727-7632

Van Amburg, Albert L IM
4910 Forest Park #202
St. Louis, MO 63108
314 361-7786

Van Norman, Robert T PS
6651 Chippewa St. #308
St Louis, MO 63109
314-644-0450

Van Ryn, Jacques S ORS
12255 DePaul Dr. Suite 360
Bridgeton, MO 63044
314-291-7510

Vandivort, Paul M P
141 N. Meramec #218
St. Louis, MO 63105
314-721-2286

Vandover, John T GP
3 Grantwood Lane
St Louis, MO 63123

VanGoidsenhoven, Guy E IM
6400 Clayton Road #316
St Louis, MO 63117
314-644-5656

Vannier, Michael W R
510 S. Kingshighway
St. Louis, MO 63110
314-362-8467

Vargas, Teodoro FP
319 N First St
Pacific, MO 63069
314-257-3500

Vatterott, Paul B IM
1538 Woodlake Dr.
Chesterfield, MO 63017
314-434-1600

Velasco, Ernesto T OM
1705 S Third St.
St. Louis, MO 63104
314-436-5100

Venable, H. Phillip OPH
407 Oak Street Rd.
Ballwin, MO 63021

Verde, Julian N R
6150 Oakland Ave.
St. Louis, MO 63139
314-768-3061

Vernava, Anthony M
3636 Vista Ave. at Grand
P.O.Box 15250
St. Louis, MO 63110
314-577-8310

Vest, James C TS
13611 Barrett Office Dr. 102
Ballwin, MO 63021
314-567-4142

Viamontes, Jorge A P
11745 Olive St. Rd.
St Louis, MO 63141
314-567-5011

Vickar, Garry M P
1245 Graham Rd Rm 506
Florissant, MO 63031
314-837-4906

Vierling, Stephen E ORS
10004 Kennerly Rd. #174B.
St. Louis, MO 63128
314-849-6555

Viers, Wayne A OTO
220 W. Argonne - Ste. 100
St Louis, MO 63122
314-966-5252

Vijungco, Herminia D AN
232 S. Woodsmill Rd.
Chesterfield, MO 63017
314-851-2917

Vijungco, Jose G R
10010 Kennerly Rd.
St. Louis, MO 63128
314-842-3560

Villafuerte, Renato G CLP
14560 Manchester Rd. #24
Ballwin, MO 63011
314-227-0056

Villafuerte, Nila A AN
232 S. Woods Mill Rd.
Chesterfield, MO 63017
314-434-1500

Villamar, Elizabeth N OBG
8059 Watson Rd.
St Louis, MO 63119
314-961-8206

Villarama, Antonio P GS
P. O. Box 177
High Ridge, MO 63049
314-677-3469

Virant, John A OTO
119 S. Spoede Rd
St Louis, MO 63141

Vitale, Nicholas S GP
614 Coachlight Lane
Hazelwood, MO 63042

Vitale, Anthony J GS
81 Burning Tree Dr.
Chesterfield, MO 63017

Vitale, Stephen J D
14377 Woodlake Dr.
Chesterfield, MO 63017
314-434-8477

Viviano, Joseph G OBG
39 Berry Road
Glendale, MO 63122

Vo, Chan P OTO
2900 Lemay Ferry Rd. #208
St. Louis, MO 63125
314-894-9192

Vollmar, Lewis C D
10004 Kennerly Rd
St Louis, MO 63128
314-842-4840

Vollmar, Theodore M R
Dept of Anes
6150 Oakland Ave.
St. Louis, MO 63139
314-768-3061

Vose, Paul C GS
10822 Sunset Plaza
St. Louis, MO 63127
314-821-2021

Votaw, Robt E OTO
10 Warson Terrace
St Louis, MO 63124

Vournas, George C CD
12255 DePaul Dr. Ste 865
Bridgeton, MO 63044
314-291-7730

Vournas, Christopher G IM
24 Chapel Hill
St. Louis, MO 63131

Wacker, Leo L FP
3563 Ritz Center Dr
St Louis, MO 63125
314-892-3132

Wagan, Primitiva C IM
300 S Grand Blvd.
St. Louis, MO 63103
314-658-5657

Wagner, John R ORS
3009 N Ballas Rd. #105
St Louis, MO 63131
314-569-0612

Waite, John G P
77 Westport Plaza, Suite 368
St Louis, MO 63146
314-434-1560

Wald, Stanley M IM
4511 Forest Park Blvd #206
St. Louis, MO 63108
314-367-5308

Walentik, Corinne PD
7234 Princeton Ave.
St Louis, MO 63130
314-879-6288

Walentynowicz, James E ORS
1034 S. Brentwood Suite 650
St. Louis, MO 63117
314-721-7325

***Walker, David Brooks** D
11245 St. Charles Rock Rd.
Bridgeton, MO 63044
314-739-6300

Walker, Francis S NS
1035 Bellevue Ave #310
St Louis, MO 63117
314-644-6565

Walker, Harvey IM
138 N. Meramec Ave.
St. Louis, MO 63105
314-721-7227

Walker, J Leslie OBG
11709 Old Ballas Rd. #202
St. Louis, MO 63141
314-567-6580

Wall, Lester E PDA
12166 Old Big Bend #106
St. Louis, MO 63122
314-821-2100

Walsh, James W IM
1034 S Brentwood Blvd #1020
St Louis, MO 63117
314-721-0666

Walsh, Barbara A OBG
621 S. New Ballas Rd. #4005
St. Louis, MO 63141
314-567-5016

Walter, William L OPH
135 W Adams
St Louis, MO 63122
314-966-2500

Walters, Henry W D
275 N. Union Blvd. Apt. 209
St. Louis, MO 63108

Waltman, Stephen R OPH
456 N. New Ballas Rd. #118
St. Louis, MO 63141
314-367-1600

Walz, Bruce J TR
10010 Kennerly Rd.
St. Louis, MO 63128
314-525-1688

Wasserman, Helman C OBG
801 S. Skinker Blvd. #8C
St. Louis, MO 63105

Wasserman, Gary M OBG
675 Old Ballas Rd. #100
St. Louis, MO 63141
314-872-9206

---

*Doctor of osteopathy.

Wasserman, Mark S OBG
224 S. Woods Mill Rd. #750-S
Chesterfield, MO 63017
314-576-9797

Waters, Hugh R IM
224 S. Woods Mill Rd. #460
Chesterfield, MO 63017
314-576-0933

Waxelman, Roger J PD
665 Big Bend Rd.
Ballwin, MO 63021
314-391-8726

Wayne, Sherwyn J ORS
439 South Kirkwood Rd. #215
St. Louis, MO 63122
314-966-8887

Webb, Karen B IM
3663 Lindell Blvd. #180
St. Louis, MO 63108
314-531-5976

Webb, Paul B OPH
6651 Chippewa St
St Louis, MO 63109
314-647-8015

Webber, William B PS
6400 Clayton #110
St Louis, MO 63117
314-645-6051

Weber, Thomas R PDS
1465 S. Grand Blvd.
St. Louis, MO 63104
314-577-5629

Weber, J. Russell ORS
533 Couch Ave.
Suite 220
St Louis, MO 63122
314-966-0111

Wee, Geo C GS
P. O. Box 835
Manchester, MO 63011

Weeks, Paul M PS
One Barnes Hospital Plaza
Suite 17424
St Louis, MO 63110
314-362-7388

Weiler, Thomas J GS
615 South New Ballas Rd
St Louis, MO 63141
314-569-6092

Weinhaus, Robert S P
868 Albey Lane
St. Louis, MO 63132
314-577-8728

Weinstein, David L OBG
7164 Princeton Ave.
St. Louis, MO 63130
314-872-9206

Weir, Don C R
625 Sherwood Dr
St. Louis, MO 63119

Weir, Royal A GS
1012 Cla Ter Ri Dr
Ballwin, MO 63011

Weis, Landy PTH
11133 Dunn Rd.
St Louis, MO 63136
314-839-3800

Weiss, Stuart N
One Barnes Hospital Plaza
Suite 16304
St Louis, MO 63110
314-367-3122

Weiss, Howard N
141 N Meramec Ave
St Louis, MO 63105
314-726-3202

Weiss, Alan N CD
One Barnes Hosp Plaza #16419
St Louis, MO 63110
314-362-7825

Weldon, Virginia V PD
800 N. Lindbergh Blvd. #D1A
St. Louis, MO 63167
314-694-3901

Wells, Samuel A GS
4960 Audubon Ave. Box 8109
St. Louis, MO 63110
314-362-8020

Welsh, Laurence C FP
103 W. Old Watson Road
St. Louis, MO 63119

Weltmer, John B ORS
12615 Old Tesson Rd.
St. Louis, MO 63128
314-849-0311

Wenneker, Alvin S IM
8112 Delmar Blvd
St Louis, MO 63130
314-725-7400

Werner, William A IM
621 S. New Ballas Rd. #3017
St. Louis, MO 63141
314-569-6958

West, Joseph W OTO
220 W. Argonne Suite 200
St. Louis, MO 63122
314-966-6656

Westerman, Robt N GS
6744 Clayton Rd
St Louis, MO 63117
314-647-3584

Westrup, Ellsworth A GP
#11 Shady Hollow Drive
Eureka, MO 63025

Wexler, Stephen A OPH
211 North Meramec #202
St. Louis, MO 63105
314-863-4200

Weyerich, Noel F IM
621 S New Ballas Rd
St Louis, MO 63141
314-432-4415

Weyman, Philip J R
St. Lukes Hospital Radiology
232 S. Woods Mill Rd.
Chesterfield, MO 63017
314-434-1500

Wheatt, Theodis M P
7605 Natural Bridge Ste 103
St. Louis, MO 63121
314-381-2465

White, Bruce I PS
456 N New Ballas Rd
St. Louis, MO 63141
314-569-2030

White, Newton B ORS
10004 Kennerly Rd.
Suite 162B
St Louis, MO 63128
314-849-4800

Whitener, Miles C IM
3015 N. Ballas Rd.
St Louis, MO 63131
314-569-5335

Whiteside, Leo A ORS
3165 McKelvey #100
Bridgeton, MO 63044
314-344-6900

Whiting, Richard B IM
6400 Clayton
St. Louis, MO 63117
314-647-7003

Whittico, James M GS
2715 Union Blvd #103
St Louis, MO 63113
314-382-7500

Wiant, James R PUD
621 S New Ballas Rd
St Louis, MO 63141
314-569-6107

Wice, Martin B PM
615 S. New Ballas Road
St. Louis, MO 63141
314-569-6945

Wiegand, Herbert C IM
40 Over Hill Drive
St. Louis, MO 63124

Wiele, Kimberly N R
1005 Des Peres Woods Ct.
St. Louis, MO 63131
314-569-6031

Wienke, Eugene C CLP
1611 Forest Aire
St. Louis, MO 63131
314-432-1850

Wilbois, Ronald P OBG
3009 North Ballas Rd
St Louis, MO 63131
314-872-9200

Wilkinson, David NS
10007 Kennerly Rd
St Louis, MO 63128
314-843-0122

Williams, Roy J IM
5221 Westminster Pl
St. Louis, MO 63108
314-261-4834

Williams, R. Jerome IM
3409 N Union
St. Louis, MO 63115
314-261-4834

Williams, Carol F GYN
950 Francis Pl.
Suite 303
St Louis, MO 63105
314-725-0511

Williams, George A IM
915 N. Grand Blvd. #111-A
St. Louis, MO 63106
314-289-6329

Williams, Joseph ORS
621 S New Ballas Rd.
Suite 101
St.louis, MO 63141
314-567-0600

Williams, Paul A FP
10822 Sunset Plaza
St. Louis, MO 63127
314-821-2021

Williams, Wendell N IM
3409 North Union Blvd
St. Louis, MO 63115
314-261-4834

Williamson, Walter E OM
514 Hillcrest Circle
Bridgeport, VA 26330

Willis, H. Robert EM
646 N. Kirkwood
St Louis, MO 63122
314-837-3700

Willman, Vallee L GS
St. Louis Univ. Hosp.
3635 Vista Ave.
St. Louis, MO 63110
314-771-7600

Wilucki, Melvin R GP
6455 Westway Rd.
St Louis, MO 63109
314-631-7113

Wimmer, Warren J PD
3220 Parker Rd
Florissant, MO 63033
314-921-4500

Windsor, Chas E OPH
621 S New Ballas Rd
St Louis, MO 63141
314-567-5602

Winer, Michael H ORS
3009 N. Ballas Rd. #141
St Louis, MO 63131
314-432-7622

Winter, John H IM
3394 McKevey Rd
Bridgeton, MO 63044
314-739-5070

Winter, Tyrus D OBG
100 N Euclid
St Louis, MO 63108
314-361-6633

Winters, Kathleen PD
4570 Audubon
St. Louis, MO 63110
314-361-6700

Winthrop, James D DR
12509 Sagamore Forest Lane
Reisterstown, MD 21136
314-821-7634

Wissner, Seth E OBG
9147 Watson Road
St. Louis, MO 63126

Withrow, Donald CLP
2040 Concourse Dr.
St. Louis, MO 63146
314-872-7144

Witt, Clyde M R
527 Meadow Creek Lane
St Louis, MO 63122

Witt, Frederick W P
755 S. New Ballas Rd. #150
St. Louis, MO 63141

Wittgen, Edward M ORS
6400 Clayton Suite 302
St. Louis, MO 63117
314-647-8562

Wittler, Harry A GS
325 N Kirkwood Rd
St. Louis, MO 63122
314-821-6162

Wolfe, Edward M D
3009 N. Ballas Rd.
St Louis, MO 63131
314-432-8199

Wolff, Dolores P AN
2306 LeLand Ridge Walk
St. Louis, MO 63131
314-569-2030

Wolff, Harold D P
522 N. New Ballas #136
St. Louis, MO 63141
314-569-1717

Wolff, Ray J P
12255 DePaul Dr. #700
Bridgeton, MO 63044

Wolff, Gerald A IM
4989 Barnes Hosp Plaza
4103
St Louis, MO 63110
314-367-2400

Wolfgram, Edwin D P
4500 W Pine Blvd
St Louis, MO 63108
314-367-1944

Won, Russell GP
6500 Lansdowne Ave.
St. Louis, MO 63109
314-352-7003

Wood, Joseph P IM
10004 Kennerly Ste 315
St. Louis, MO 63128
314-843-7333

Woods, John J GS
621 South New Ballas #307
St. Louis, MO 63141
314-567-6666

Wool, Gerald PD
8025 Dale
St Louis, MO 63117
314-644-2566

•Doctor of osteopathy.

Woolsey, Joyce E PD
3 Briarcliff St.
St. Louis, MO 63124

Woolsey, Robt M N
3 Briarcliff
St Louis, MO 63124
314-771-7600

Wotawa, Wm J OBG
3804 Wilmington Ave
St Louis, MO 63116
314-481-7224

Wright, Jeffrey M IM
456 N. New Ballas #129
St. Louis, MO 63141
314-569-1881

Wulff, Geo J OBG
610 E. Ridge Village Dr.
Miami, FL 33157

Wurr, Dieter H FP
Arnold Med Ctr Box 99
Arnold, MO 63010
314-296-5464

Yang, Chao Yung AN
6420 Clayton Rd.
St. Louis, MO 63117
314-768-8000

Yannakakis, John E OBG
1245 Graham
Florissant, MO 63031
314-831-6517

Yanover, Robert A N
1301 Boonslick Rd.
St. Charles, MO 63301
314-878-1110

Yanow, Mitchell OBG
621 S. New Ballas Rd.
Suite 4005
St. Louis, MO 63141

Yap, Mardonio J GS
493 Rue St Francois
Florissant, MO 63031
314-831-0077

Yasin, Fazle M P
11709 Old Ballas Rd.
St. Louis, MO 63141
314-993-8950

Yates, Darrel W DR
3009 N. Ballas Ste 131
St Louis, MO 63131
314-432-5284

Yazdi, Tom M OBG
9147 Watson Road
Crestwood, MO 63126
314-352-6969

Ylagan, Amando GS
8548 Bryan Ave.
St. Louis, MO 63117
314-771-9196

Yontz, David L FP
8182 Maryland Ave. Suite 301
Clayton, MO 63105
314-726-7880

Yoon, Kong-Woo NS
3635 Vista Ave. at Grand
St. Louis, MO 63110
314-577-8847

Yoselevsky, Robert OPH
621 S. New Ballas Rd. #S006
St. Louis, MO 63141
314-432-5478

Young, Robert A GS
224 S. Woods Mill Road
530 South Bldg.
Chesterfield, MO 63017
314-569-2030

Young, Paul H NS
6725 Chippewa
St. Louis, MO 63109
314-644-7111

Young, Vernon L PS
4960 Audubon
St. Louis, MO 63110
314-362-7390

Younger, Anita C GP
3814 Ballantrae Drive
Sarasota, FL 33583

Younger, Ernest GP
3814 Ballantrae Drive
Sarasota, FL 33583

Yu, Simon M IM
4061 Lindell Blvd
St. Louis, MO 63108
314-531-4488

Zehnder, Kenneth W ORS
6400 Clayton Rd. #302
St. Louis, MO 63117
314-647-8562

Zeigler, Jos M R
1840 Woodtin Ct.
St Louis, MO 63122
314-865-3333

Zekert, Horst IM
Gen American Natl Ser Ctr
P. O. Box 14490
St. Louis, MO 63178
314-525-5218

Zia, Rashid P
12255 DePaul Drive
Bridgeton, MO 63044
314-291-2500

Ziegler, Robert E IM
7511 Big Bend Boulevard
St. Louis, MO 63119
314-962-4511

Zimmerman, Herbert B IM
456 N. New Ballas
Suite 299
St Louis, MO 63141
314-569-1090

Zivnuska, Frederick R TR
4 Cricklewood Place
St. Louis, MO 63131

Zotos, Veronica D PTH
10010 Kennerly Rd.
St. Louis, MO 63128
314-525-1144

Zukowski, Edward T R
88 River Bend Dr.
Chesterfield, MO 63017
314-781-1103

Zylka, John M IM
452 Gray Ave..
St. Louis, MO 63119
314-962-2525

198 — SALINE

Baik, Kenneth Y GS
917 South Odell
Marshall, MO 65340
816-886-9644

Blalock, Robt W IM
370 S Odell St
Marshall, MO 65340
816-886-3366

Butner, Michael R FP
370 S Odell
Marshall, MO 65340
816-886-3565

Hamid, Rashid S FP
107 E. Vine
Brunswick, MO 65236
816-548-3021

Knipschild, Bedford F GP
370 S Odell St
Marshall, MO 65340
816-886-3366

Lawrence, John R GP
Professional Bldg
Arrow Rock, MO 65320
816-837-3430

Newman-Koehn, Mica K FP
913 Redwing Drive
Marshall, MO 65340
816-886-3364

Papreck, K T FP
370 S Odell
Marshall, MO 65340
816-886-3366

Raynor, Richard C GP
370 S Odell
Marshall, MO 65340
816-886-3366

Roehrs, Marvin E GP
370 S Odell St
Marshall, MO 65340
816-886-3366

Scott, C. Alan IM
623 Leawood Drive
Marshall, MO 65340
816-886-3364

Uhrig, Jack R IM
O'Dell Avenue Clinic
370 South O'Dell
Marshall, MO 65340
816-886-3366

202 — SEMO

Adams, Mark A ORS
1012 North Main Street
Sikeston, MO 63801
314-471-0330

Ahlvin, Robt C PTH
Delta Community Hospital
1008 N. Main
Sikeston, MO 63801
314-471-1600

Angelos, Brad J NEP
1012 N. Main
Sikeston, MO 63801
314-471-0330

Askew, John H FP
1012 N Main Street
Sikeston, MO 63801
314-471-0330

Baker, Gary E PD
USAFA Hospital
Colorado Sprgs, CO 80840

Barkett, Kenneth J OPH
1012 N. Main
Sikeston, MO 63801
314-471-0330

Bell, Michael F GS
1012 N. Main
Sikeston, MO 63801
314-471-0330

Blanton, Jos C PD
1012 N Main St
Sikeston, MO 63801
314-471-0330

Bowers, Gregory R AN

MDMC 1008 N. Main
Sikeston, MO 63801
314-461-1600

Bruce, Leo A OPH
808 E Wakefield
Sikeston, MO 63801
314-471-3358

Campbell, James W GP
Advance, MO 63730
314-722-5173

Cento, Donald PTH
Mo. Delta Community Hosp.
1008 N. Main
Sikeston, MO 63801
314-471-1600

Chen, Alan J FP
1300 N. One Mile Rd.
Dexter, MO 63841
314-624-8051

Chouinard, Michael P IM
1012 N Main St
Sikeston, MO 63801
314-471-0330

Colbert, Robt S R
108 Salcedo Road
Sikeston, MO 63801
314-471-1600

Comeau, Richard J GP
W Grant-Catalpa Sts
Dexter, MO 63841
314-624-3137

Critchlow, Wm C FP
P. O. Box 1068
Sikeston, MO 63801
314-471-0330

Dempsey, Kenneth J D
1012 N. Main
Sikeston, MO 63801
314-471-0330

Felker, C. Edward OTO
1118 N. Main
Sikeston, MO 63801
314-471-6992

Frazier, Robt L FP
110 Dudley Dr
Sikeston, MO 63801
314-471-1600

Handoo, Nuzhat GP
1012 North Main
Sikeston, MO 63801

Heath, Jimmy D GP
320 N Lincoln
P. O. Box 38
East Prairie, MO 63845
314-649-3026

Heeb, Max A GS
1012 N Main St
Sikeston, MO 63801
314-471-0330

Helfrich, Loring GS
1012 N Main
Sikeston, MO 63801
314-471-0330

Hill, Ronald T GS
1300 N. One Mile Rd., Ste. 5
Dexter, MO 63841
314-624-8917

Ho, Grinny H OBG
808 E Wakefield St
Sikeston, MO 63801
314-471-7555

Jones, Stanley G FP
1012 N. Main
Sikeston, MO 63801
314-471-0330

Levie, Benton B PD
1012 N. Main
Sikeston, MO 63801
314-741-0330

Mahboubi, Aziz O U
P. O. Box 653
Sikeston, MO 63801
314-471-6682

Massarat, Parviz R
Dexter Memorial Hospital
Dexter, MO 63841
314-624-5566

Miller, William D GP
Hwy 114 W. Box 519
Dexter, MO 63841
314-624-4591

Page, Jesse W IM
1012 N Main St
Sikeston, MO 63801
314-471-0330

---

*Doctor of osteopathy.

Painter, Andrew E GP
204 E. 3rd St.
Portageville, MO 63873
314-379-5467

Pfefferkorn, David A IM
1012 N Main
Sikeston, MO 63801
314-471-0330

Poole, Anthony G OBG
1012 N. Main
Sikeston, MO 63801
314-471-0330

Rezvani, Laghaieh R
101 Meadowbrook
Sikeston, MO 63801
314-472-2033

Roberts, Theodore W FP
1118 N. Main Suite B
Sikeston, MO 63801
314-472-4440

Rodriguez, Gregorio L GS
P O Box 394
Charleston, MO 63834
314-683-6066

Sargent, Alden P GP
915 Taylor
Sikeston, MO 63801

Shell, William C GE
1012 N Main
Sikeston, MO 63801
314-471-0330

Thornton, Fred H GS
1012 N Main St
Sikeston, MO 63801
314-471-0330

Walton, J. Douglas FP
1012 N Main
Sikeston, MO 63801
314-471-0330

Waltrip, Roy T FP
307 W Malone
Sikeston, MO 63801
314-471-4510

206 — SOUTH CENTRAL

Barbe, David O FP
120 West 16th Street
Mountain Grove, MO 65711
417-926-6111

Chern, Mou S IM
North of Junctions 5 & 14
P. O. Box 218
Ava, MO 65608
417-683-3511

Choudhury, M. Hasan GP
1330 S.Sam Houston Boulevard
Houston, MO 65483
417-967-4155

Coffee, Amos L GP
P O Box 160
Willow Springs, MO 65793
417-469-3175

Dimayuga, Nestor G FP
Mercy Hosp Tri County
Mansfield, MO 65704
417-924-3281

Dixon, Druery J FP
816 E. 2nd Street
Willow Springs, MO 65793
417-469-3116

Doherty, Daniel W OPH
1202 Kentucky
West Plains, MO 65775
417-256-4111

Dreyer, Wm F GP
1418 So Hiway 63
Houston, MO 65483
417-967-2232

Duff, William M GS
RR1 Box 115
Rolla, MO 65401

Fowler, Marvin L FP
805 Kentucky Ave.
West Plains, MO 65775
417-256-2111

Gentry, Marvin C GP
Rural Route 2 Box 4
Ava, MO 65608

Hasek, James A FP
Rt 3 Box 257-A
Mountain Grove, MO 65711
417-926-3155

Hawkins, Stephen L FP
526 Spruce
Cabool, MO 65689
417-962-3121

Hayes, Nancy J FP
120 West 16th St.
Mountain Grove, MO 65711
417-926-6111

Huffman, Thos L FP
2006 Cambridge Drive
West Plains, MO 65775
417-334-2841

Kang, Young M GS
P O Box 725
214 Main St
West Plains, MO 65775
417-256-8161

Mayuga, Laureano G GS
P. O. Box 499C
514 Pine
Cabool, MO 65689
417-962-4255

Moore, Michael R GP
805 Kentucky
West Plains, MO 65775
417-256-2111

Preston, Bruce E FP
805 Kentucky
West Plains, MO 65775
417-256-2111

Ray, David J U
P.O. Box A
West Plains, MO 65775
417-256-3141

Reddy, Nalini A OPH
808 Kentucky
West Plains, MO 65775
417-782-2338

Reddy, Anchala N PUD
2914 Laurie Dr.
West Plains, MO 65775
417-782-3212

Santiago, Felix R GS
St. Francis Medical Bld.
Suite 2 POBox 518
Mountain View, MO 65548
417-934-6998

Shafer, Kenneth E CD
1115 Alaska Ave., Suite 212
West Plains, MO 65775
417-256-1999

Shaw, Robert D FP
P. O. Box 148
Willow Springs, MO 65793

Smith, Claude F FP
816 East Second St
Willow Springs, MO 65793
417-469-3116

Spencer, John P IM
1115 Alaska
West Plains, MO 65775
417-257-7078

Stubbs, Thomas R GS
709 Kentucky
West Plains, MO 65775
417-256-0056

Tarneja, Kailash C DR
West Plains Mem Hospital
P.O. Box 1007
West Plains, MO 65775

Tio, Liep T TR
1115 Alaska Ave. Suite 116
West Plains, MO 65775
417-257-7080

Walker, Ambrose T FP
414 S 6th St
Thayer, MO 65791
417-264-7121

Wall, Joe A GP
107 East Pine
Houston, MO 65483
417-967-3323

Weygandt, Paul L ORS
805 Kentucky
West Plains, MO 65775
417-256-2115

208 — TRI-LAKES

Chaffin, Jerald D FP
427 Cahill Rd.
Branson, MO 65616
417-334-4117

Crain, James W GS
P.O. Box 280
Branson, MO 65616

Gillispie, John L IM
427 Cahill Road
Branson, MO 65616

Greenberg, Benjamin E R
Route 2, Box 1
Forsyth, MO 65653
417-334-3155

Hunsley, Perry U GS
547 N. Business Hwy 65
Branson, MO 65616
417-334-1093

Lauderdale, William H IM
P. O. Box 10 Hwy-Y
Forsyth, MO 65653
417-546-4200

***Loveland, Richard D** IM
H.C.R. #1 Box 282
Hollister, MO 65672
417-335-2282

Morrison, Tom V OPH
427 Cahil Rd.
Branson, MO 65616
417-344-0044

Regier, Carl M R
St. Rt. 1, Box 1356
Branson, MO 65616
417-338-2423

Shaffer, Lynn R FP
HCR 7 Box 458
Branson, MO 65616
417-334-7111

Wonder, Donald GS
547 N. Business Hwy 65
Branson, MO 65616
417-334-1093

Zeller, William M FP
P.O. Box 1306
Branson, MO 65616
417-334-6455

210 — WEBSTER

Bareis, Robt J FP
Route #1
Marshfield, MO 65706
417-468-2339

Macdonnell, Thos M FP
Route #1
Marshfield, MO 65706
417-468-2339

214 — WEST CENTRAL

Bever, Grant A OBG
1620 E. Elm St.
Harrisonville, MO 64701
816-524-5600

Calabria, Rafael P
Heartland Hospital
Nevada, MO 64772
417-667-2666

Carroll, Danny K ORS
17053 S. 71 Highway
Belton, MO 64012
816-322-0688

Dang, Robert C FP
P. O. Box 146
Pleasant Hill, MO 64080
816-987-2111

Frein, Donald E GP
501 S Lexington
Box F
Harrisonville, MO 64701
816-884-3272

Garwood, Jan D FP
900 South Adams
Nevada, MO 64772
417-667-6015

Gehm, Louis E DR
Bates County Hosp
615 Nursery
Butler, MO 64730
816-679-4135

Greenlund, Nelson C FP
Nelson Greenlund
Rt 4
Nevada, MO 64772
417-667-6015

Harms, James F GS
900 S Adams
Nevada, MO 64772
417-667-6015

Haynie, William W GP
706 S. High
Butler, MO 64730
816-679-3118

Jones, Edward S FP
7531 W. 93rd St.
Overland Park, KS 66212

Jones, Robert R PD
900 S Adams
Nevada, MO 64772
417-667-6015

Lee, Gerald B CD
P. O. Box 6037
Kansas City, KS 66106

Long, Curtis W GP
200 W. Chestnut
Butler, MO 64730
816-679-4600

Lovinger, Warren C IM
122 W. Walnut
Nevada, MO 64772
417-667-8484

Ludwig, Lee V GS
Southland Center
1626 E. Elm
Harrisonville, MO 64701
816-887-2218

Lusk, Chas A GP
911 Country Club
Butler, MO 64730

Magee, Robt L FP
808 S Main St
Eldorado Spring, MO 64744
417-876-4234

---

*Doctor of osteopathy

214 — WEST CENTRAL

Magruder, Lyell M GP
Nevada Medical Clinic
900 S. Adams
Nevada, MO 64772
417-667-6015

Moore, Michael T DR
800 S. Ash
Nevada, MO 64772
417-667-3355

Moore, Candice A GP
122 W. Walnut
Nevada, MO 64772
417-667-2054

Morton, Wayne L FP
Box 427
Osceola, MO 64776
417-646-8123

Pearse, Roy W GP
P.O. Box 1198
Forsyth, MO 65653

Price, Richard C FP
103 S. Oriole Ave.
Harrisonville, MO 64701
816-884-3244

Rabon, Nancy A OBG
1957 San Fernando Court
Rolla, MO 65401
314-364-8003

Reed, Glen H GP
Appleton City, MO 64724
816-476-2121

Rinck, Edward C P
900 S Ash
Nevada, MO 64772

Scully, Bruce D FP
411 N. Beech
Appleton City, MO 64724
816-476-2121

Strobach, Robt L GP
706 South High St.
Butler, MO 64730
816-679-3118

Suwanabhand, Chalaw IM
200 West Chestnut
Butler, MO 64730
816-679-3149

Thies, Jerome H FP
Tri-County Clinic
Osceola, MO 64776
417-646-8153

Thompson, Frederick L FP
900 S Adams
Nevada, MO 64772
417-667-6015

Torontow, Raphael J IM
900 S. Adams
Nevada, MO 64772
417-667-6015

Turner, William A GS
900 S. Adams
Nevada, MO 64772
417-667-6015

Van Zanten, Niko A FP
Box 421
Osceola, MO 64776
417-646-8123

Wheeler, Robt L FP
103 S. Oriole Ave.
Harrisonville, MO 64701
816-884-3244

215 — RESIDENTS

Abele, F. Andrew
5100 Foxridge Suite 1311
Mission, KS 66202
816-932-2000

Achar, Lakhanagam G
17420 Ne Halsey No 46
Portland, OR 97230

Adams, Charles R IM
4512 Rainbow
Kansas City, KS 66103

Agee, Jeffrey H CD
724 N. Clay
Kirkwood, MO 63122
314-965-2245

Aks, Howard A IM
1021 N. Kendall
#1316
Miami, FL 33176
305-271-2764

Allen, James R GS
C/O St. Lukes Hosp
44th & Wornall
Kansas City, MO 64111
816-933-2000

Alsup, Cynthia A OBG
5433 Nall
Roeland Park, KS 66205
913-722-2105

Anderson, Mark D IM
7400 Beech St.
Pine Bluff, AR 71603

Anderson, Douglas S FP
520 E. 126th Terrace
Olathe, KS 66061
816-756-1222

***Andrews, Richard C** IM
1314 Ed Carey Road
Harlingen, TX 78550
531-455-0000

Arora, Narinder S IM
State Chest Hosp.
Mt. Vernon, MO 65712

Ayres, Robert A GP
1248 Bella Brook
St. Louis, MO 63137

Azar, Frederick M
4605 Lindell Blvd. Apt 1202
St. Louis, MO 63108

Balk, Robert
7710 E. 29th St.
Little Rock, AR 72204

Banton, Michael R P
1313 Summerhawk Lane
Fenton, MO 63026
314-225-6030

Bare, Charles E
2815 W Dennis Ave
Olathe, KS 66061

Barker, A. Paul EM
P. O. Box 805
Morgantown, WV 26507

Barlet, Beth OBG
104 E. Green Meadows #21
Columbia, MO 65203
314-882-9001

Basler, Joseph W U
1341 Trelane
Crestwood, MO 63126
314-968-2882

***Bear, Philip A** IM
18016 Winslow Road
Shaker Heights, OH 44122
816-531-4559

Beckman, Fred N
Ellis Fischel State Can
Hospital
Columbia, MO 65201

Beesley, Kari PD
101 N. Janell
Olathe, KS 66061
913-780-4339

Bellus, Gary A PD
8813 Wrenwood Lane
Brentwood, MO 63144
314-963-1225

***Benbow, Gregory A** FP
2109 Bellevue Apt I
St. Louis, MO 63143
314-768-3685

Berdy, Gregg J OPH
282 Main St.
Winchester, MA 01890

Berdy, Susan S IM
282 Main Street
Winchester, MA 01890
617-726-3764

Bernard, Lisa AN
12704 Pawnee
Leawood, KS 66209
314-345-1232

Bertuso, John R IM
1305 Ashland Gravel Rd #g
Columbia, MO 65201
816-531-4559

Bethke, Richard A
Truman Medical Center
2301 Holmes
Kansas City, MO 64108
816-652-8563

Betz, Edward
13652 Cantara
Pandrama, CA 91407

***Beyer, Craig F** OPH
3652 Hickory
St. Louis, MO 63110
314-772-9200

Biest, Ann Agnew IM
1536 Swallow Dr.
Brentwood, MO 63144
314-962-1881

Bishop, Arthur F R
Mallinckrodt Inst. Of Rad.
510 S. Kingshighway
St. Louis, MO 63110

Blanchard, Gary W AN
915 Woodshire Lane
St. Louis, MO 63141
314-768-3000

Bleifuss, Juergen W IM
506 6 Ave. Nw Austin
Austin, NM 55912
816-531-4559

Bliss, Greg A GS
1316 Harding Ave.
Edmond, OK 73013

Bluestone, Kenneth I AN
9037 W. Swan Circle
St. Louis, MO 63144
314-962-7883

Bohan, James A FP
Family Medical Care Ctr
University Of Mo Med
Columbia, MO 65201

Bolesta, E. Stephen PTH
2901 West Rollins Road
Apt B-8
Columbia, MO 65203

Bondurant, Charles P NS
Univ of MO Hosp & Clinics
N522 Dept of Neurosurg
Columbia, MO 65212
314-882-4908

Bono, Gregory L US
865 Pomeroy Ave #303a
Santa Clara, CA 95051

Boullier, John A GS
511 Fairview
Webster Groves, MO 63119
314-577-8790

Bowler, Ulysses S IM
1726 W Xyler
Tulsa, OK 74127

Bowler, Larry D IM
2209 West Xyler
Tulsa, OK 74127

Boyd, James H OTO
805 Red Oak Lane
Columbia, MO 65203
314-882-8173

Branham, Gregory H OTO
One Barnes Hospital Plaza
St. Louis, MO 63110
314-362-7529

Braun, Charles R IM
1829 S. 10th St.
St. Louis, MO 63104

***Bronson, Wendell D** IM
55 F Broadway Village Dr.
Columbia, MO 65201
314-449-3358

Brooks, Richard J IM
10540 Washington #303
Kansas City, MO 64114
816-932-3406

Brooks, Kevin E IM
US Naval Hosp Kadena
Okinawa, Japan
FPO Seattle, WA 98778
816-358-3481

Brown, Craig J OPH
P.o. Box 3058
Fayetteville, AR 72702

Brown, Scott H IM
P.O. Box 55232
Little Rock, AR 72205
816-537-2747

Brown, Michael S AN
2709 Bayonne Ct.
Columbia, MO 65203

Buescher, Lucinda S D
M173 Univ Hospt Dept of Derm
1 Hospital Drive
Columbia, MO 65212
314-882-3141

Burkman, Kip A PMR
11324 Ellison Ave.
Omaha, NE 68164

Burks, Michael L OBG
N603 One Hospital Drive
Columbia, MO 65212
314-882-7937

Campbell, Ann E IM
Huron Rd. Hospital
13951 Terrace Rd.
Cleveland, OH 44112

Campbell, Gregory S OTO
Dept of OTO
1 Hospital Dr.
Columbia, MO 65212
314-882-8173

Campbell, Edward M PS
9213 Nemo
St. Louis, MO 63123
314-577-8793

Campos, Antonio GS
Deaconess Hospsurg
St Louis, MO 63139

Capps, Robert J IM
Umc Hospital & Clinics
#1 Hospital Drive
Columbia, MO 65212
314-882-8095

Carney, Lisa A PD
12811 W. 88th #128
Lenexa, KS 66215
913-888-2891

Carney, Susan H
5024 Stonewall
Little Rock, AR 72207

Catanzaro, Anthony F IM
567 Southbrook Dr.
Kirkwood, MO 63122
314-965-8413

***Chapman, Thomas C** IM
10618 St. Catherines Lane
Kansas City, MO 64137
816-966-9504

---

*Doctor of osteopathy.

Charles, Elaine Z PTH
645 S. New Ballas Road #3D
St. Louis, MO 63141
314-569-6120

Chavda, Deepak ORS
1400 Ridge Townhouse Frank
AptF 415 Chunns Cove Rd
Ashville, NC 28805

Cheng, Jesse W IM
Crown Court, Apt. 7E
129 York Street
New Haven, CT 06511

Christian, Amy B IM
Sells Indian Hosp
Sells, AZ 85634
816-756-1579

Chung, Moo H
197 N Washington Ave
Battle Creek Sanitar
Battle Creek, MI 49016

Clark, John A IM
Apt 5 E 9191 Jefferson Pl
Sandy, UT 84070

Clark, Mark S IM
608 E. Armour Apt #2
Kansas City, MO 64109
816-531-1250

Clark, Lin W
2301 Holmes
Kansas City, MO 64108
816-556-3000

Clyne, Patrick PD
4023 A Westminster
St. Louis, MO 63108
314-531-4025

Cochran, Calvin D
6432 Oak
Kansas City, MO 64113
816-531-5472

Cokingtin, Diana L IM
2544 N. LeFeber
Wauwatoia, WI 53213

Cokingtin, Cliff
2544 N. Lefeber Ave.
Wauwatosa, WI 63213

Cole, Donald E AN
2601 Hillshire Drive
Columbia, MO 65203
314-882-2568

Collins, Edward J
Ft Leonard Wood Army Ho
Fort Leonard Wo, MO 65473

Colliton, W. Scott PD
12014 Slater
Overland Park, KS 66213
417-339-6253

Condy, Angela G EM
4804 Holly St.
Loris, SC 29569
314-569-6000

Cook, Paul R OTO
M583A 807 Stadium
Columbia, MO 65212
314-882-8173

Cooper, Byron S
8320 Old Courthouse Rd
Vienna, VA 22180

Cooperman, Glenn A OBG
722 Finch Court
Chesterfield, MO 63017
314-768-8780

Cotter, John B OPH
330 East 2nd St
Duluth, MN 55805

Cross, Mary C IM
4717 Jasper Street
Metairie, LA 70002

Crow, Jimmie R GS
7105 W. 69th St.
Shawnee Mission, KS 66204

D'Orazio, Stephen E GS
3286 January Ave. Apt #1
St. Louis, MO 63139
314-352-1557

Dansdill, David J RHU
1 Hospital Dr.
Columbia, MO 65212
314-882-4141

Daugird, Allen J FP
Nw 500
University Of Mo Med
Columbia, MO 65201

Davis, David F AN
8642 Fredericksburg Rd. #606
San Antonio, TX 78240
314-367-6345

Dempsey, Maureen E PD
1600 Skylane Drive
Columbia, MO 65201
314-882-4932

Desire, Kathleen M EM
600 E. 8th Apt 115
Kansas City, MO 64106
816-474-4616

Devgan, Baldev K
1325 S Grand Blvd
St Louis, MO 63104

Dewolfe, Mark ONC
29 E. 53rd St.
Kansas City, MO 64112

Diemer, David P R
1450 Bluebird Terrace
St. Louis, MO 63144
314-569-6865

Diemer, Kathryn M OBG
1450 Bluebird Terrace
St. Louis, MO 63144
314-454-7105

Dill-Wilkinson, Linda IM
1350 N. Wells #F107
Chicago, IL 60610
816-363-2265

Dolan, Stephen A ID
13105 Turley Branch Parkway
Rockville, MD 20853

Dooley, Thomas W PS
1714 Garfield Ave.
Wyomissing, PA 19610
314-882-2275

Dorsett, Sarah J FP
Goppert Family Care Ctr.
6601 Rockhill Rd.
Kansas City, MO 64131
816-276-7600

Dovre, Erik J OBG
1111 Edward Terrace
St. Louis, MO 63117

Downard, James M OBG
UMHC Dept of OBGYN N602
One Hospital Drive
Columbia, MO 65212
314-882-9001

Downey, Richard S GS
9016 Lawn Ave.
Brentwood, MO 63144
314-367-6140

***Drake, David W** OBG
1325 S Grand
St Louis, MO 63104

Draper, John B FP
916 Scott Blvd
Columbia, MO 65203
314-445-2082

Driehorst, William L IM
4935 Wyandotte St.
Kansas City, MO 64112
816-531-4559

Driskell, Karen K
Truman Medical Center
2301 Holmes
Kansas City, MO 64108
913-268-0834

Duesterhoeft, D'Ann AN
5817 Nina Place #2E
St. Louis, MO 63112
314-362-6973

Dunlany, Sam C
1325 S Grand
St Louis, MO 63104

Dunteman, Edwin D AN
1415 Mautenne
Manchester, MO 63021

Dusing, Reginald W FP
St. Lukes Hosp-Radiology
44th at Wornall
Kansas City, MO 64111
816-524-7711

Dwyer, David S OPH
737 45th St.
Des Moines, IA 50265
816-556-3482

Dye, Kevin R IM
Suite 12 5601 N. Antioch Rd.
Gladstone, MO 64119
816-453-6849

Early, James H GS
Dept of Family Practice
P. O. 2003
Tyler, TX 75710
214-877-7204

Eisermann, Juergen G OBG
1870 Dougherty Estates Dr.
Ballwin, MO 63011
314-362-1242

Ellis, Jeffrey J R
5306 N Cumberland #215
Chicago, IL 60656

Elwing, Terry J R
7421 Sunburst Ct.
Columbia, MO 65202
314-882-4141

Ennen, Randy M OPH
6601 Bolton Circle
Fort Smith, AR 72903

Eppright, Thomas D P
501 Cedar Lane
Columbia, MO 65202
314-449-2511

Esterl, Robert M GS
3883 Utah Place
St. Louis, MO 63116
314-772-3295

***Estivo, Michael P** ORS
1904 S. Cottage Grove Place
Kirksville, MO 63501
816-665-6374

Ezzati, Mashallah
1515 Lafayette
St Louis, MO 63104

Fagan, Leonard F CD
533 Couch Ave. Ste. 174
St. Louis, MO 63122
314-965-9980

Feigl, Alexander J U
2015 Alfred
St. Louis, MO 63110
314-577-8000

Feldman, Robert I OTO
3635 Vista at Grand
P. O. Box 15250
St. Louis, MO 63110
314-577-8000

Fisher, Mary Jo FP
3504 S. Nettleton
Springfield, MO 65807
417-881-6106

Foster, C S
3 Lewis St
Newton, MA 02158

Foy, Thomas M PD
5802 Benning
Houston, TX 77096
314-464-3266

Frakes, James T GE
209 Creek's Edge
Box 20 Polk's Landing
Chapel Hill, NC 27514

Freeman, Mark E P
750 Florence Ave.
St. Louis, MO 63119
913-236-4883

Frenkel, Ronald B OS
305 Metairier Lawn Dr.
Metairier, LA 70001

Friedrich, Anthony P EM
716 Hidden Lake Dr.
St. Peters, MO 63376
314-441-0400

Froeschle, Ellis Birch FP
P.O.Box 36
Rocheport, MO 65279
314-882-4141

Gagnon, Gregory A PTH
Univ of Mo Hosp & Clinics
Dept of Pathology
Columbia, MO 65212
314-882-1121

Gall, Alan M OTO
4989 Barnes Hospital Pl
St Louis, MO 63110

Gamis, Alan S IM
7500 High Drive
Prairie Village, KS 66208
913-642-2456

Gaughan, Rebecca N OTO
11616 Bond
Overland Park, KS 66208

Gehrke, Jon C EM
7605 Mc Gee
Kansas City, MO 64114
816-531-4559

Gold, Carl G GS
1101 Eastwood Circle
Columbia, MO 65201
314-882-4141

Gottesman, Gary S PD
1175 Olive Lake Dr. Apt I
St. Louis, MO 63132
314-454-6000

***Graessle, Donna M** IM
17216 W. 67th St.
Shawnee, KS 66216
913-268-8788

Grant, Mark OBG
Dept of OBG UMCH&C
One Hospital Drive
Columbia, MO 65212
314-882-4141

Graves, Joe A OTO
107 Westwood
Columbia, MO 65203
314-882-8173

Greenwald, James E IM
6224 Washington Ave.
St. Louis, MO 63130
314-362-2565

Griffin, Anthony C GS
7824 Rosedale Drive
St. Louis, MO 63121
314-362-1242

Grimes, James B ORS
8200 Krollway #65
Bakersville, CA 93311

Gwin, Todd
Dept of Oph 171 Ashley Rd.
Charleston, SC 29425

Hacker, Kenneth A GS
7125 Beverly Dr.
Overland Park, KS 66204
913-677-5357

Haggerty, Jesse C FP
5400 Eichelberger #2
St. Louis, MO 63109
314-569-6010

---

*Doctor of osteopathy.

Hall, Gary D GS
5417 Foxridge Dr. #103
Mission, KS 66202
913-236-7081

Hall-Davis, Jacquelyn P
4146 A Labadie
St. Louis, MO 63115
314-577-8740

Handshy, Stanley E FP
Goppert Family Care Unit
6601 Rockhill Rd.
Kansas City, MO 64131
816-361-7333

Hannah, Phyllis D IM
5101 Oak Leaf Dr.
Kansas City, MO 64129
816-921-7686

Hardin, Ward M IM
Rt 5 Box 394
Stillwater, OK 74074
816-353-9322

Hardin, David B PM
SR-01 Rusk Rehab Ctr
Columbia, MO 65212
314-882-3101

***Harkins, Anna M** IM
Apt 368 7323 Brompton
Houston, TX 77025

Harold, Ralph E IM
7 Marlee Drive
Canton, IL 61520

Harris, Dale R
8952 Lindenhurst
Crestwood, MO 63126

Hart, Richard S IM
2121 El Paseo #2105
Houston, TX 77054

Hatchett, John W GS
106 Crestmere
Columbia, MO 65201
314-882-8178

Hazen, Jacalyn E PD
318 S. Hanley #2N
St. Louis, MO 63105
314-725-7843

Heidewald, Thomas D IM
P. O. Box 26/HHC
11th Aviation Group
APO New York, NY 09025

Heilman, M. Kathlyne OBG
Rt. 10, Box 405C
Columbia, MO 65202
314-882-7937

Herberg, Michael S IM
1823 Hickory St.
St. Louis, MO 63104
314-569-6000

Herrmann, Deborah A FP
2128 E. Monroe Terrace
Springfield, MO 65802

Hickman, Peri L IM
2301 Holmes
Kansas City, MO 64108
816-556-3453

***Hill, Gregory A** IM
7641 N. Stoddard
Kansas City, MO 64152
816-587-5100

Hoelzer, Karen L IM
1530 S. Grand Ave. West
Springfield, IL 62704
217-793-0850

Hoelzer, David L IM
1530 S. Grand Ave. West
Springfield, IL 62704
217-793-0850

Hof, Jem J PM
Department of PMR UMC
1 Hospital Drive
Columbia, MO 65212
314-882-3101

Hofer, Jeffrey S IM
12460 Whisper Hollow Dr.
#h
Maryland Height, MO 63043

***Hogan, Patricia E** P
Psychiatry Department
VA Med Ctr.
Leavenworth, KS 66048

Holman, Marie IM
10314 Bilston Ct. Apt 5
St. Louis, MO 63146
314-567-6887

Hong, Diana L PD
11704 Mastin, Apt 2702
Overland Park, KS 66210
913-345-9389

Horn, Arthur H PM
1120 E. 58th Street
Brooklyn, NY 11234
314-882-3101

Huang, Geo ORS
640 La Casa Via
Walnut Creek, CA 94596

Huet, Raul IM
2512 W. 90th St.
Leawood, KS 66206
913-649-7738

Huggins, Michael B GS
4960 Audubon
St. Louis, MO 63110
314-962-9864

Ichtertz, Greg L IM
Wynbrook West Apt. 0-9
Dutch Neck Rd.
Hightstown, NJ 08520
609-443-5612

Jackson, Mary A
6550 Fannin Scurlock Tower
Suite 1275
Houston, TX 77054

Jacobs, Robyn H
210 East 68th Terrace
Kansas City, MO 64113
816-523-0367

Jalal, Sohail IM
1200 S Oneida St. #13-301
Denver, CO 80224
314-561-2710

Jantzen, Laura J OBG
7612 Terrace
Kansas City, MO 64114
816-333-5466

Jones, Thomas F
311 Brush Creek Blvd #501
Kansas City, MO 64112

Jones, Robin R AN
1313 Overhill Rd.
Columbia, MO 65203
314-445-4396

Jones, Arthur C OTO
830 Kings Cliff Road
St Louis, MO 63122

***Joubert, Paul M** IM
1612 W. 49th St.
Kansas City, MO 64112
816-756-0132

Judd, Jeffrey B R
521 Donne
St. Louis, MO 63130
314-557-8025

Kaback, Keith R IM
Apt. 1a 5240 Foxridge Dr.
Mission, KS 66202

Katz, Sandra B OPH
Box 83 Lakeview Dr.
Killideere Point
South China, ME 04358

Kefalas, John C ORS
2003-5 County Cork Dr.
Chesterfield, MO 63017
314-256-4762

Kelly, Anne C GS
120 W. 38th
Hays, KS 67601
816-556-3505

Keniston, William D IM
2917 W. Rollins Apt A1
Columbia, MO 65203

Khan, Mohammed B IM
11993 Meadow Run Ct.
Maryland Hghts, MO 63043
314-434-5800

King, Mark D
7065 Flintstone Trail #302
St. Louis, MO 63123
314-849-0874

King, Phillip E DR
2 Gardner St
Johnstown, PA 15905

King, James C GP
7709 East 15th Ct
Tulsa, OK 74112

Klotz, Stephen A IM
8036 Pawnee #102
Shawnee Mission, KS 66208

Kluzak, Thomas R OBG
3916 Bluff Rd.
Springfield, IL 62707
314-569-6880

Knotts, Donald R
18904 Santa Maria Ave.
Castro Valley, CA 94546

Knudsen, Michael W PD
4961 Laclede #202
St. Louis, MO 63108
816-421-0545

Ko, Tommy Khiong IM
2301 Holmes
Kansas City, MO 64108
816-556-3000

Koenig, David J IM
16 F Broadway Village Dr.
Columbia, MO 65201
314-882-4141

Koenig, Harold G FP
900 ½ N 8th St. #A
Springfield, IL 62702
314-449-3386

***Kohn, Robert G** P
C6 Health Sciences Ctr.
Columbia, MO 65212
314-445-3705

Koogler, Robert J IM
601 A. Eagle
Shepard Afbs, TX 76311

Kopelson, Jeffrey C FP
18-5 Woods Brooke Circle
Ossining, NY 10562

Kountz, Paul D DR
320 East Third Ave.
Rome, GA 30161
404-291-4913

Kramer, Jeffrey B GS
#12 18 S. Kingshighway
St. Louis, MO 63108
314-454-2909

Krikorian, Raffi K IM
2860 State St.
Granite City, IL 62400
618-452-2840

Krojanker, David N P
104 Sunset Drive
Rochester, NY 14618

Krummenacher, Keith S AN
465 Marford Dr.
St. Louis, MO 63141
314-443-2511

Kubart, Ermalyn PD
9028 W. 64th Place Apt 202
Merriam, KS 66202
913-831-4581

Kumar, Hanumanthu OPH
2601 N Whittier
St Louis, MO 63113

Kuyakanon, Weerapan
4673 South 38th St
St Louis, MO 63116

Kyzer, David D ORS
2802 Sparger Rd.
Durham, NC 27705

LaMear, William R OTO
4150 Alamos Place
Columbia, MO 65201
314-882-8173

Laster, Jerry L GS
N-512 1 Hospital Dr.
Columbia, MO 65212
314-882-3959

***Lawson, Gina E** IM
102 NE 50th Ct #933
Kansas City, MO 64118
816-452-6986

Le, Van A R
Dept of Rad St. Louis Univ
3635 Vista Ave.
St. Louis, MO 63110
314-577-8025

Lee, Kim L IM
7311 Normandie Court Apt P
St. Louis, MO 63042

Lee, Benjamin Y OPH
#8 Fayette St. #3 r
Boston, MA 02116

Leiferman, James G PD
8255 Delmar Blvd.
University City, MO 63124

Lenobel, Robert S R
140 Gay Ave
St Louis, MO 63105

Levine, Steven M GS
33 Pond Avenue
Brook House #b616
Brookline, MA 02146

Linn, Richard M ORS
6434 City West Pky #6317
Eden Prairie, MN 55344

Long, Douglas J GS
5561 Teton Dr.
Columbia, MO 65212

Lopate, Glenn N
4355 Maryland Ave. #109
St. Louis, MO 63108
314-362-5000

Love, Gerry A IM
8720 Cambridge Apt. 608
Kansas City, MO 64138
816-353-5649

Lowry, Patricia A R
4022 N. Story Rd. #911
Irving, TX 75062

Luke, Robert A IM
6215 Tholozan Ave.
St. Louis, MO 63109
314-362-7462

Lundgren, Craig H IM
7520 York Dr. Apt 2SW
Clayton, MO 63105
314-726-5764

Maas, Corey S OTO
3635 Vista at Grand
PO Box 15250
St. Louis, MO 63110
314-577-8884

Mackaman, Bert J D
University Of Missouri
M752
Columbia, MO 65201

Madjitey, George OB
1231 Selkirk Lane #8
St. Louis, MO 63125

---

*Doctor of osteopathy.

Mamalis, Nicholas D IM
929 Valley Ridge Ave.
No. 310
Homewood, AL 35209

Mannis, Mark J OPH
1459 Valley View Dr.
Coralville, IA 52241

Mantese, Vito A PUD
4523 Old Baumgartner
St. Louis, MO 63129
314-577-8000

Mardiney, Michael IM
4615 Lindell
President Apt. #703
St. Louis, MO 63108

Margreiter, Martha J PD
7781 Charing Sq
St. Louis, MO 63119
816-968-7212

Mariano, Rodrigo A PTH
3961 A Botanical Ave.
St. Louis, MO 63110
314-577-8782

Martin, Darnell L D
M173 Div of Derm
One Hospital Dr.
Columbia, MO 65212
314-882-3141

Martin, Victoria L IM
235 Ward Parkway #303
Kansas City, MO 64112

Martinez, Kimberly R IM
8228 NW Bradford Ct.
Kansas City, MO 64151
816-741-6373

Maza, Jose G R
1515 Lafayette
St Louis, MO 63104

Mc Lelland, Bruce A
6160 S Yale
Tulsa, OK 74136

McConnell, Robt G
2019 Fairview E #1
Seattle, WA 98102

McCulloch, Dawna
5421 Foxridge Dr. #208
MissionCity, KS 66202

McCulloch, Scott W IM
5421 Foxridge Dr. #208
Mission, KS 66202
913-362-9515

McCullough, Timothy L FP
653 S. New Ballas Rd. #3-B
St. Louis, MO 63141
314-993-9650

McDonald, James H IM
2301 Holmes
Kansas City, MO 64108

McGowan, Mark PUD
1648 Towne Dr Apt 3c
Columbia, MO 65201

McHenry, Karen K OBG
1411-E Shady Creek
St. Louis, MO 63146
314-577-8000

McKinnon, Ryan S OS
649 S. New Ballas Rd. #3D
Creve Coeur, MO 63141
314-567-4157

McLear, Patrick W OTO
1017 Trelane Ave.
St. Louis, MO 63126
314-362-7552

McManama, Gerold P CDS
Dept of Surgey M575 UMCHC
One Hospital Dr.
Columbia, MO 65203
314-582-7335

McQuillan, Robert J AN
Dept of Anes 44th & Wornall
Kansas City, MO 64111
816-932-2033

***Meghjee, Zinnat** IM
10170 Chaucer Ave. #3
Overland, MO 63114
314-426-7085

Memula, Narayanagoud TR
115 Business Loop 70 West
Columbia, MO 65201

Mendlick, Michael R
14609 Chalet Dr.
Olathe, KS 66062

Metz, Brian A GS
7126 Eby #204
Merriam, KS 66204
816-932-2000

Miller, Thomas FP
K.u. Med. Ctr.
39th & Rainbow Blvd.
Kansas City, KS 66103

Miller, William R
510 S Kingshighway Blvd
St Louis, MO 63109

Miller, Douglas S D
Univ of Mo Hosp Room M173
One Hospital Dr.
Columbia, MO 65212
314-882-3140

Miller, Pamela S P
3501 New Haven Rd. #132
Columbia, MO 65201

Mills, Brian G AN
910 W. 42nd St.
Kansas City, MO 64111
816-932-2033

Minke, Thomas A OBG
645 S. New Ballas Rd. Apt 2B
Creve Coeur, MO 63141
314-997-2093

Mirowitz, Scott A DR
32 Morwood Lane
St. Louis, MO 63141
314-362-2967

***Mitchem, Randall E** IM
5131 Russell
Mission, KS 66202
913-432-5282

Modjtehedy, Mohammad H GS
2601 N Whittier St
St Louis, MO 63113

Monaco, Michael IM
2301 Holmes
Kansas City, MO 64108
816-556-3000

Monson, Bruce DR
3114 Wood View Ridge Dr. 301
Kansas City, KS 66103
913-384-3429

Montgomery, Gordon J
2601 N Whittier
St Louis, MO 63113

Moore, Y. Scott P
Western Mo Ment. Hlth Ctr.
600 E. 22nd St.
Kansas City, MO 64108
816-471-3000

Moritz, Mark W GS
1634 Ponce De Leon
Atlanta, GA 30307

Morrison, Howard IM
525 Clara Ave. Apt 101
St. Louis, MO 63112
314-361-8388

Morse, Martin A GS
361 Austin
Newton, MA 02165

Muehlebach, Gregory F GS
7646 Belleview
Kansas City, MO 64114
816-444-8759

Muehlebach, Victoria AN
7646 Belleview
Kansas City, MO 64114
816-444-8759

Mujumdar, Sulabha S OBG
Gibbsboro Rd
Scandia Memman Apt 7
Lindenwold, NJ 08021

Mullen, Christopher J IM
UMKC Gold 4
2411 Holmes
Kansas City, MO 64108
816-474-4100

Mulligan, Michael E FP
653 S. New Ballas #3C
St. Louis, MO 63141
816-569-6060

Murmann, Don IM
2334 Binley Dr.
Houston, TX 77077

Murney, Richard G IM
Western Montana Clinic
P.o. Box 7609
Missoula, MT 59807

Musick, William D CD
2006 Bridgewater
Columbia, MO 65202
314-882-4141

Narayanan, Vinodh PD
7 Tower Hill G
Olivette, MO 63132
314-997-4299

Nashelsky, Marcus B PTH
907 Broadhead St.
Columbia, MO 65203
314-442-4709

Navato, Cielo D IM
3624 Bluejacket Dr.
Lee's Summit, MO 64063

Ngo, Tuyen N PMR
5R-01 Rusk Rehab Center
One Hospital Dr.
Columbia, MO 65212
314-882-3101

Nielsen, Mark A IM
320 McNeel Lane
North Platte, NB 69101

Norsoph, Ellis B
435 East 70th St. #6f
New York, NY 10021

Norwood, Russell W R
510 S. Kingshighway
St. Louis, MO 63110
314-362-7111

O'Brien, Jeana D IM
4140 Shenandoah
St. Louis, MO 63110
314-771-9107

O'Connor, Timothy P GS
5660 Kingsbury #108
St. Louis, MO 63112
314-577-8372

Obritsch, Jerry M OBG
2801 W Broadway #H3
Columbia, MO 65203
314-882-9001

Odujebe, Henry A GS
2601 N Whittier
St Louis, MO 63113

Olsen, Timothy W IM
4134 Eaten
Kansas City, KS 66103
913-262-4470

Olson, Steven A ORS
1743 Sonora
Columbia, MO 65201
314-882-8178

Ong, Catherine M PDC
7777 A. Charing Square Lane
St. Louis, MO 63119
314-454-6000

Ormsby, Monica P IM
431 Conway Lake Drive
St. Louis, MO 63141
314-768-0000

Otto, Russell J GS
15 Sibert Lane
Ft Leonard Wood, MO 65473
314-445-0524

Owen-Kummer, Medge D OBG
8047 Kenwood
Kansas City, MO 64111
816-333-3973

Owens, Bruce A IM
6910 W. 52nd Pl. Apt 1A
Mission, KS 66202
816-932-2000

Ozanich, Katherine M D
639 Newport Ave.
Webster Groves, MO 63119
314-454-2641

Pack, Keith E P
550 Donne
St. Louis, MO 63130
314-362-5000

Packo, Kirk H OPH
655 Washington Blvd.
Apt. 2
Oak Park, IL 60302

Palmer, John O IM
2460 W Downer
Aurora, IL 60506

Palmeri, Vicente C GP
Univ. Of Okla Med. Col.
2727 E. 21st Midway Bld
Tulsa, OK 74105

Parraga, Humberto C CHP
107 Wild Rose Lane
Rochester, IL 62563

Parrish, Steven T EM
5421 Foxridge Dr. Apt 302
Mission, KS 66202
913-262-3719

***Parsons, William B** IM
1313 North 16th St.
Durant, OK 74701

Patel, Jayprakash V U
Department of Urology
1 Hospital Drive
Columbia, MO 65212
314-882-1151

Pearlman, Milton H OTO
Univ. Of Mo.
Columbia, MO 65201
314-882-4141

Perll, Michael F
Dept of Med 2301 Holmes
Kansas City, MO 64108
816-556-3452

Perryman, Kathy M PD
1004 W. 68th Terr
Kansas City, MO 64113
816-523-0600

Petros, Teresa M PD
7715 Blackberry
University City, MO 63130
314-454-6000

Petros, John A U
7715 Blackberry
University City, MO 63130
314-362-5000

Pew, Becky A P
7201 Maryland Ave.
St. Louis, MO 63130

Phelan, Christie B R
6430 Melrose
Shawnee Mission, KS 66203
913-962-2055

Phillips, Karen K IM
7212 Walker Ave.
Lincoln, NE 68507

---

*Doctor of osteopathy.

Phillips, John G OTO
7807 Garden Ave.
St. Louis, MO 63119
314-362-7550

Phillips, Granville G
3411 Sirius Ave
El Paso, TX 79904

Piercy, Stephen L U
Rt 2
Claremont, IL 62421
314-531-5835

Pittman, C. Christopher DR
3635 Vista at Grand
POBox 15250
St. Louis, MO 63110
314-577-8025

Platt, William M PM
Physical Medicine and Rehab
501 Rusk One HospitalDr
Columbia, MO 65212
314-882-3101

Polukoff, Gerald I IM
7301 Broadway Apt D-211
910 Post Office
Galveston, TX 77554

***Postelwait, Gary L** IM
213 Country Lane
Lee's Summit, MO 64063
816-531-4559

Potter, Cynthia J IM
4226 Harrison
Kansas City, MO 64110

Powell, Robt C
177 W Brighton Ave
Syracuse, NY 13205

Prather, Charlene M IM
35 East 62nd Terrace
Kansas City, MO 64113
816-444-9639

Pressly, Thomas A IM
Department of Medicine
Health Science Ctr
Columbia, MO 65212
314-882-4141

Prewitt, David W IM
10 N. Taylor #2N
St. Louis, MO 63108
314-534-7406

Prewitt, Maryann E OBG
10 N. Taylor #2N
St. Louis, MO 63108
314-534-7406

Pruitt, Robert M IM
6315 Main St.
Kansas City, MO 64113
816-444-3648

Pryor-Brown, Carolyn J OBG
2020 Ranchdale Dr.
St. Louis, MO 63136
314-869-7206

Purcell, Henry E IM
6210 Devonshire
St. Louis, MO 63109
314-843-3449

Purtell, Allison E IM
7350 Gallagher
Apt. 260
Edina, MN 55435

Quinn, Kent S R
2121 Buckingham Dr. Nw #4
Cedar Rapids, IA 52405

Radford, Diane M GS
3123 Park Hampton Court
St. Louis, MO 63139
314-577-8000

Rahman, S. Noor IM
1839 Forest St. Parkway
Denver, CO 80220

Rahoy, Patricia A IM
Western Missouri Health Ctr
Warrensburg, MO 64093

Raible, Michele D IM
Truman Medical Center
2301 Holmes
Kansas City, MO 64108
816-556-3566

Ramos, Richardo R PTH
1202 N. Harrison Ave.
St. Louis, MO 63122
314-362-1475

Rampertaap, Moonasar P IM
Chapin Building E #2077/SUNY
Stony Brook, NY 11794

Rasado, Jose R IM
7507 Oxford 3E
Clayton, MO 63105
314-725-4570

***Ray, Curt L** IM
5100 Foxridge Dr. #723
Mission, KS 66202
913-932-2000

Reagan, Gary M
3217 So. Grand Apt. 1 S.
St. Louis, MO 63118
314-773-8442

Reddy, Sreejaya A IM
P. O. Box D
Glasgow, KY 42141

Redmond, John W
477 S Broad St
Wallingford, CT 06492

Reed, Mark O PMR
4630 Wolverine Dr.
Saginaw, MI 48603

Reese, Jeffrey C GS
402 Edgewood Ct.
St. Joseph, MO 64506
816-232-5113

Reiner, Dan S GS
7028 Waterman
University City, MO 63130
314-721-4912

Rettenmaier, Lawrence J IM
1310 42nd Plaza #9
W. Des Moines, IA 50265
314-882-4141

Rhodes, Barry US
1325 S Grand
St Louis, MO 63104

Riesman, Jeffrey A IM
115 W. Sexton
Columbia, MO 65203
314-474-9940

Ring, Kevin F IM
5933 El Monte
Fairway, KS 66205
913-722-5467

Ritter, R. August ORS
2337 S. Milton
Overland, MO 63114
314-577-8850

Roberts, John M P
Dept. Of Psy. Med. Un. S.c.
171 Ashley Ave.
Charleston, SC 29401

Robinson, Richard C IM
712 Tobin Dr. #101
Inkster, MI 48141
816-753-6587

Robinson, William J PD
Suite 350 2700 Hospital
N Kansas City, MO 64116
816-234-3000

Rodeffer, Henry D IM
7901 Baymealous Circle
Jacksonville, FL 32216
314-968-8263

Rodgers, Nancy T IM
4320 Laclede Ave.
St. Louis, MO 63108
314-533-0253

Rodriguez, Raymond L AN
1445 Greenfield Crossing
Ballwin, MO 63021
314-577-8000

Roland, William E IM
4809 Prestwick Ct.
Columbia, MO 65203
314-442-9726

Rose, Barry A ORS
6724 Troost
Kansas City, MO 64131
816-333-1700

Rosenblum, Jerry L PD
500 South Kingshighway
St. Louis, MO 63110

Rossiter, Thomas W OS
9 G San Miguel Dr.
St. Charles, MO 63303
314-947-4012

Rottler, Paul D PS
UMC Plastic Surgery
#1Hospital Dr. Rm M349
Columbia, MO 65212
314-882-2275

Rowe, John T
1866 Newell
Walnut Creek, CA 94595

Ruggieri, Paul GS
18 S. Kingshighway Apt 4-F
St. Louis, MO 63108
314-367-8276

Ruiz, Jose M IM
5622 Delmar #512
St. Louis, MO 63112
314-367-7123

Rundorff, Robert L PMR
703 Linden Ave
Johnston, PA 15902
314-882-3101

Saboeiro, Gregory R R
31 Aylesbury Drive
St. Louis, MO 63132

Saef, Jerold L IM
5818 9th Ave Dr. W.
Bradenton, FL 34209

Saffitz, Mark S IM
216 S. Kinsghighway
St. Louis, MO 63110
314-454-7000

Sajjadi, Hamid OPH
1706 Brush Creek 303
Kansas City, MO 64110
816-556-3501

Sakamoto, Dan K
1325 S Grand Blvd
St Louis, MO 63104

Salmon, Timothy P D
4504b Ft. Crockett
Galveston, TX 77550
314-882-3141

Sampat, Pravin IM
210 N. Grace
Apt. G
Chamberlain, SD 57325

Sander, Paul D AN
W350 Dept. Anes
807 Stadium Rd.
Columbia, MO 65201

Sangar, Vijay K NM
Nuclear Medicine Div
One Hospital Drive
Columbia, MO 65212
314-443-2511

Santolin, Craig CD
2130 Orchard Valley Dr.
Lacrosse, WI 54601

Sastry, Malladi R
15747 El Estado
Dallas, TX 75240

Saviers, Daniel A PM
Rusk Rehab 1 Hospital Drive
Columbia, MO 65212
314-882-3101

Saxer, John J FP
12902 State Line Road
Leawood, KS 66209

Scheer, Michael F GS
1887A Waterfront Dr. No.
Columbia, MO 65202
314-882-2245

Scheperle, Mark A IM
4330 West Pine
St. Louis, MO 63108

***Schlegel, William L** IM
704 E. Cary
Papillion, NE 68128
816-229-7107

Schmitz, Ralph A FP
311 Westridge Drive
Columbia, MO 65203
314-882-2162

***Schnee, David M** GS
1133 Ashland #1206
Columbia, MO 65201
314-882-2162

Schnurpfeil, Donald E FP
1899 Pinehurst Ct.
Waterloo, IA 50701

Schuchardt, Robert L FP
122 E. Woodbine
St. Louis, MO 63122
314-997-3728

Schwab, Robert A EM
4617 Jefferson Apt. 1045
Kansas City, MO 64112
816-531-4559

Scokin, Daniel PD
300 E. Burnam Road
Columbia, MO 65203
314-882-4932

Sehra, Kankanady H
Regional Medical Clinic
Mc Dowell, KY 41647

Seligman, Morris H IM
12535 Dawn Beth
Maryland Hghts, MO 63043
314-275-8695

Seuc, Carlos A IM
1325 S. Grand
St. Louis, MO 63104
314-771-7600

Shadowen, Rebecca D IM
Med Univ SC Dept ID
171 Ashley River Road
Charleston, SC 29411

Shadowen, David I IM
808 Trafalgar St.
Charleston, SC 29412

Sherman, Thomas M IM
604 County Hills Dr.
Rock Hill, MO 63119
314-362-1242

Shintaku, Mickey R ORS
1746 South Barrington
Los Angeles, CA 90025

Shook, John W GS
5100 Foxridge Dr. #1732
Mission, KS 66202
913-722-1387

Shuttari, Mir F IM
1021 Ashland Rd. #902
Columbia, MO 65201
314-882-2991

Siegfried, Carla J IM
5316 Pershing Apt 308
St. Louis, MO 63112
913-677-3144

---

*Doctor of osteopathy.

Slaughter, Larry FP
52 Broadway Village Dr. G
Columbia, MO 65201
314-882-4141

Smith, Gregory L GS
6204 Nw 82nd Terr
Kansas City, MO 64151

Smith, Ronald M ORS
1143 Olive Lake Dr. #D
St. Louis, MO 63132
314-567-4616

Snider, Gregory T FP
645 S. New Ballas Rd. #2D
St. Louis, MO 63141

Snider, John M GS
4016 Booth
Kansas City, KS 66103
913-722-0826

Sobol, Steven M OTO
Barnes Hospital Plaza
St. Louis, MO 63110

Sohn, Daniel G PM
5R-01 Rusk Rehab Center
One Hospital Dr.
Columbia, MO 65212
314-882-1512

Solish, Samuel P OPH
660 S. Euclid Ave. Box 8096
St. Louis, MO 63110
314-362-7159

Song, Joseph K
P. O. Box 290097
St. Louis, MO 63129
314-874-0551

Spangler, Robert T
Harrison Med Bldg South
Suite 306
Canton, OH 44708

Sparagana, Steven P PD
10317 Sannois #6
St. Louis, MO 63146
314-432-1994

***Spiller, James C** IM
6835 West 52nd St. #3A
Mission, KS 66202
914-262-3861

Sprehe, Samuel E OTO
1403 S. Rock Hill Rd.
St. Louis, MO 63119
314-968-3989

Stanford, James F IM
5617 Aberdeen
Shawnee Mission, KS 66205

Stass-Isern, Merrill L OPH
4601 Orville #12
Kansas City, KS 66102
913-287-2226

Stautz, Curtis C DR
8641 Sleepy Hollow
Kansas City, MO 64114
816-932-2550

Styczynski, R. Mark IM
1207 E. 18th St.
Sterling, IL 61081

Summers, William K
3811 O Hara St
Pittsburgh, PA 15216

Surratt, Eleatha L P
7483 Ahern Ct.
St. Louis, MO 63130
314-862-4593

Susman, Lisa IM
5203 Skyline Dr.
Mission, KS 66205
913-677-5138

Swindle, Kerry K FP
6396 Enright
University City, MO 63130

Sylvester, James NM
Rt 8
Columbia, MO 65202
314-882-7955

Tannenbaum, Jerome S IM
3732 Granada Lane
Dallas, TX 75205

Tavassoli, Fattaneh A
Co Obgyn Breast Patho
A F I B
Washington, DC 20305

Thomas, Roger P PM
Dept of Physical Med
Rusk Rehab 1 HospitalDr
Columbia, MO 65212
314-882-3101

Thornhill, Joseph M AN
7642 Westmoreland Ave.
St. Louis, MO 63105

Thornton, Michael K OBG
7323 Hoover #C12
St. Louis, MO 63117
314-367-1275

Thukral, Reeta IM
3939 Havna Blvd
Suite 19
Metairie, LA 70002

Tillman, Craig P DR
3619 Chateau Knoll
Bettendorf, IA 52722
314-882-1161

Timimi, Farris K IM
40 No. Kingshighway Apt 13C
St. Louis, MO 63108
314-367-9148

Trachtenberg, Jeffrey D GS
40 N. Kingshighway
St. Louis, MO 63108
314-367-8418

Trame, Eldon A IM
% Ann Stewart Md
615 S New Ballas Rd.
St. Louis, MO 63141
314-569-6000

Triggs, Gregg K IM
6125 N. Jefferson Apt. 5
Kansas City, MO 64118
816-531-4559

Trombka, Lawrence H P
Psychiatry Clinic 6
1 Hospital Drive
Columbia, MO 65212
314-882-2511

Turner, Scott A FP
1443 N. Robberson Suite 805
Springfield, MO 65802
417-886-6371

Tyree, Thomas A
5425 Foxridge Dr.
Shawnee Mission, KS 66202
913-588-5000

Valen, Peter A IM
4049 E. North St.
Tucson, AZ 85712

Valuck, Thomas B PD
1005 Pennsylvania #10
Kansas City, MO 64105
816-221-2543

Verola, Nicholas W
1325 South Grand
St Louis, MO 63104

Visner, Sandra L GS
11209 E. 50th St.
Kansas City, MO 64133
816-224-3440

***Vogt, Mark D** IM
Wetzel Clinic Hwy 13 North
Clinton, MO 64735

Vu, Liem C PTH
Univ. Of Mo. Med. Ctr.
Dept. Of Path.
Columbia, MO 65201
314-882-1121

Walden, James M IM
10921 W. 99 Pl.
Overland, MO 63114

Walterbach, James IM
12311 S 25th. Ave.
Omaha, NE 68123

Waxman, Steve W U
Univ of KS Med Ctr
39th & Rainbow Blvd.
Kansas City, KS 66103
913-588-5000

Weber, Karen J IM
Suite 901 P. O. Box 24203
Tampa, FL 33623
816-953-2768

Weber, Raymond K FP
615 S. New Ballas
St. Louis, MO 63141

Wehrman, Stephanie A P
4325 Cordin
Bridgeton, MO 63044
314-298-5849

Weigel, Nancy S FP
4236 Blaine 2FL
St. Louis, MO 63110
314-776-5075

Weisman, Edward B P
1515 W. Pleasant
Knoxville, IA 50138

Weldon, Bruce C PD
7333 Amherst
University City, MO 63130
865-400-0000

Welsh, Jon A FP
920 Linz
Blue Springs, MO 64015

West, Lynn T D
Department of Dermatology
M173
Columbia, MO 65212
314-882-3141

Whisenant, Michael N IM
438 Colonial Ave. A
Lancaster, SC 29720

White, M. Jill R
510 S. Kingshighway
St. Louis, MO 63110
314-454-2000

Wilber, Richard B
1465 S Grand
St Louis, MO 63104

Wilkinson, Steven B IM
1350 N. Wells #F107
Chicago, IL 60610
816-363-2265

Wingkun, Edwin C N
4309 Groveland Road
University Hght, OH 44118

Wirths, Kimberly M FP
820 E. Montclair #236
Springfield, MO 65807
417-882-8706

Wittgen, Catherine GS
7323 Fernbrook Dr. Apt 302
St. Louis, MO 63123
314-842-6443

Woerther, Rodney K IM
412 W. 11th St. Apt 304
Kansas City, MO 64105
816-421-7883

Wolf, James A GS
8119 Greenbush
Houston, TX 77025

Wong-Berberich, Genevieve N IM
8816 Eager Rd.
St. Louis, MO 63144
913-432-4462

Woods, David A OPH
3652 Hickory St.
St. Louis, MO 63110
314-577-6038

Worthen, Rodney L U
Lawton, OK 73501

Wright, William P IM
1 E 65 - Cardiology
1 Hospital Dr.
Columbia, MO 65212
314-882-7712

Wright, James R PTH
95 Georgetowne #D
Columbus, OH 43214
314-361-6017

Wynstra, James H ONC
3537 Dix Ave.
St. Louis, MO 63114
314-426-3453

Zachary, Paul E IM
10218 W. 80th St. #313
Overland Park, KS 66204
816-556-3000

Zack, Ashley S
4601 W 109th St
Shawnee Mission, KS 66211

Zimmerman, Devin D N
Barnes Hosp Plaza Box 8111
St. Louis, MO 63110
314-362-1242

Zoellner, Patrick A AN
7612 Terrace St.
Kansas City, MO 64114
816-333-5466

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Maha E Abdul-Malak
Cynthia Ackerman
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Sara Schweigert
William J Sciortino
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Robert D Seelig
Ashish Sehgal
Daniel S Seid
Terrell L Sellers
Randall J Severance

Kevin Shady
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Ramzi R Shehadi
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Paul J Sheya
Kren K Shriver
Susan Shutt
Louis W Sieben
Louise A Sieben
Deepak Singh
C. Jeffrey Sippel
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Jordan B Sterns
Noel B Stibor
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Lee Jayson Stone
Mark J Stout
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Philip T Suarez
Richard W Suda
Lynn S Sudduth
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Christian Swanson
Joseph D Sweeney
John Symington
Bernard J Szopa
Charles Tadros
A. Joseph Tector
Gregg Teigen
Ine Maria Tejarahadi
Paula Termuhlen
Thomas Terramani
Steven A Thalberg
Richard G Thorlakson
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Conrad J Tirre
Michael L Tjoelker
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Timothy M Tolan
Nickolas A Tomasic
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Tom Tremback
Steven J Trottier
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Kathy A Trumbull
Mickey M Tseng
Jimmy W Turnage
W. Sherman Turnage
Jane W Turner
Erica L Uppstrom
Wilbur D Van Buren
Donald D Van Fossan
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Stuart K Wakatsuki
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David F Wallace

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James J Walsh
Daniel C Wascher
Daniel E Weakly
William R Weaver
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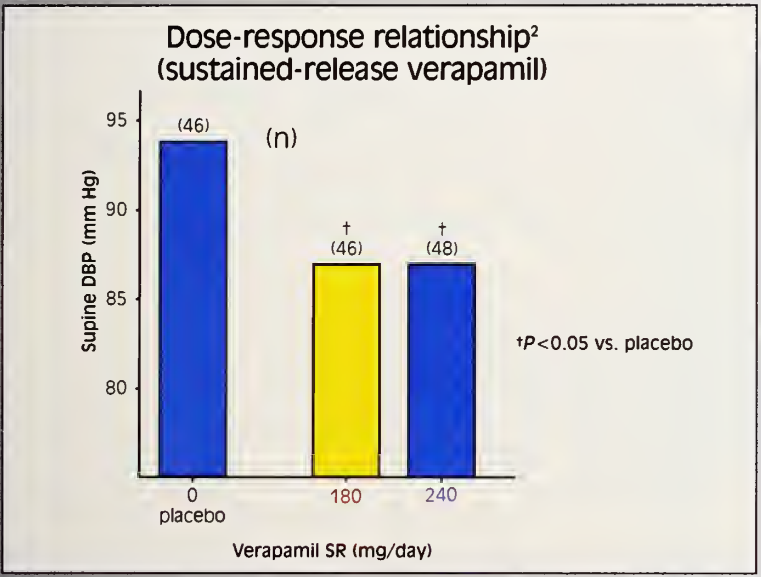

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BRIEF SUMMARY

Contraindications: Severe LV dysfunction (see *Warnings*), hypotension (systolic pressure < 90 mm Hg) or cardiogenic shock, sick sinus syndrome (if no pacemaker is present), 2nd- or 3rd-degree AV block (if no pacemaker is present), atrial flutter/fibrillation with an accessory bypass tract (eg, WPW or LGL syndromes), hypersensitivity to verapamil.

Warnings: Verapamil should be avoided in patients with severe LV dysfunction (eg, ejection fraction < 30%) or moderate to severe symptoms of cardiac failure and in patients with any degree of ventricular dysfunction if they are receiving a beta-blocker. Control milder heart failure with optimum digitalization and/or diuretics before Calan SR is used. Verapamil may occasionally produce hypotension. Elevations of liver enzymes have been reported. Several cases have been demonstrated to be produced by verapamil. Periodic monitoring of liver function in patients on verapamil is prudent. Some patients with paroxysmal and/or chronic atrial flutter/fibrillation and an accessory AV pathway (eg, WPW or LGL syndromes) have developed an increased antegrade conduction across the accessory pathway bypassing the AV node, producing a very rapid ventricular response or ventricular fibrillation after receiving I.V. verapamil (or digitalis). Because of this risk, oral verapamil is contraindicated in such patients. AV block may occur (2nd- and 3rd-degree, 0.8%). Development of marked 1st-degree block or progression to 2nd- or 3rd-degree block requires reduction in dosage or, rarely, discontinuation and institution of appropriate therapy. Sinus bradycardia, 2nd-degree AV block, sinus arrest, pulmonary edema and/or severe hypotension were seen in some critically ill patients with hypertrophic cardiomyopathy who were treated with verapamil.

Precautions: Verapamil should be given cautiously to patients with impaired hepatic function (in severe dysfunction use about 30% of the normal dose) or impaired renal function, and patients should be monitored for abnormal prolongation of the PR interval or other signs of overdosage. Verapamil may decrease neuromuscular transmission in patients with Duchenne's muscular dystrophy and may prolong recovery from the neuromuscular blocking agent vecuronium. It may be necessary to decrease verapamil dosage in patients with attenuated neuromuscular transmission. Combined therapy with beta-adrenergic blockers and verapamil may result in additive negative effects on heart rate, atrioventricular conduction and/or cardiac contractility; there have been reports of excessive bradycardia and AV block, including complete heart block. The risks of such combined therapy may outweigh the benefits. The combination should be used only with caution and close monitoring. Decreased metoprolol clearance may occur with combined use. Chronic verapamil treatment can increase serum digoxin levels by 50% to 75% during the first week of therapy, which can result in digitalis toxicity. In patients with hepatic cirrhosis, verapamil may reduce total body clearance and extrarenal clearance of digitoxin. The digoxin dose should be reduced when verapamil is given, and the patient carefully monitored. Verapamil will usually have an additive effect in patients receiving blood-pressure-lowering agents. Disopyramide should not be given within 48 hours before or 24 hours after verapamil administration. Concomitant use of flecainide and verapamil may have additive effects on myocardial contractility, AV conduction, and repolarization. Combined verapamil and quinidine therapy in patients with hypertrophic cardiomyopathy should be avoided, since significant hypotension may result. Concomitant use of lithium and verapamil may result in a lowering of serum lithium levels or increased sensitivity to lithium. Patients receiving both drugs must be monitored carefully. Verapamil may increase carbamazepine concentrations during combined use. Rifampin may reduce verapamil bioavailability. Phenobarbital may increase verapamil clearance. Verapamil may increase serum levels of cyclosporin. Concomitant use of inhalation anesthetics and calcium antagonists needs careful titration to avoid excessive cardiovascular depression. Verapamil may potentiate the activity of neuromuscular blocking agents (curare-like and depolarizing); dosage reduction may be required. Adequate animal carcinogenicity studies have not been performed. One study in rats did not suggest a tumorigenic potential, and verapamil was not mutagenic in the Ames test. Pregnancy Category C. There are no adequate and well-controlled studies in pregnant women. This drug should be used during pregnancy, labor, and delivery only if clearly needed. Verapamil is excreted in breast milk; therefore, nursing should be discontinued during verapamil use.

Adverse Reactions: Constipation (7.3%), dizziness (3.3%), nausea (2.7%), hypotension (2.5%), headache (2.2%), edema (1.9%), CHF, pulmonary edema (1.8%), fatigue (1.7%), dyspnea (1.4%), bradycardia: HR < 50/min (1.4%), AV block: total 1°,2°,3° (1.2%), 2° and 3° (0.8%), rash (1.2%), flushing (0.6%), elevated liver enzymes. The following reactions, reported in 1.0% or less of patients, occurred under conditions where a causal relationship is uncertain: angina pectoris, atrioventricular dissociation, chest pain, claudication, myocardial infarction, palpitations, purpura (vasculitis), syncope, diarrhea, dry mouth, gastrointestinal distress, gingival hyperplasia, ecchymosis or bruising, cerebrovascular accident, confusion, equilibrium disorders, insomnia, muscle cramps, paresthesia, psychotic symptoms, shakiness, somnolence, arthralgia and rash, exanthema, hair loss, hyperkeratosis, macules, sweating, urticaria, Stevens-Johnson syndrome, erythema multiforme, blurred vision, gynecomastia, increased urination, spotty menstruation, impotence.

References:

1. 1988 Joint National Committee: The 1988 report of the Joint National Committee on Detection, Evaluation, and Treatment of High Blood Pressure. *Arch Intern Med* 1988;148:1023-1038.
2. Data on file, G.D. Searle & Co.

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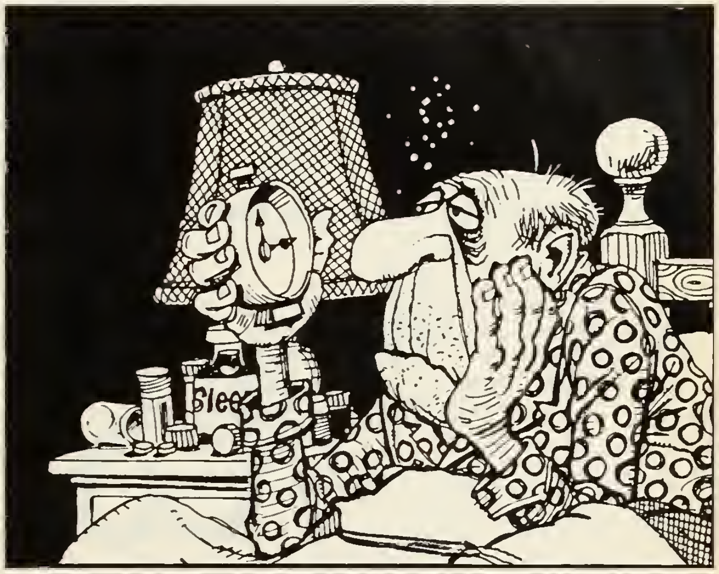

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August

1 **John Kendig Neuroscience Lecture Series** — Location: St. John's Mercy Medical Center, von Gontard Conference Center, St. Louis, MO. Contact: Judith L. O'Guin, St. John's Mercy Medical Center, 615 S. New Ballas Rd., St. Louis, MO 63110. 314/569-6290.

3 **Infectious Disease in the 90's** — Location: Research Medical Center, Kansas City, MO. Contact: David L. Smith, M.D., Research Medical Center, 2316 East Meyer Blvd., Kansas City, MO 64132. 816/276-4306.

3 - 4 **Management of Non-Unions and Orthopaedic Infections** — Location: Ritz-Carlton Hotel, St. Louis, MO. Contact: Cathy Caruso, Office of Continuing Medical Education, Washington University School of Medicine, 660 S. Euclid, Box 8063, St. Louis, MO 63110. 314/325-9862.

5 - 10 **Ninth Annual Internal Medicine Review For the Primary Care Physician** — Location: South Padre Hilton Resort, South Padre Island, TX. Contact: Charlene E. Lee, Office of Continuing Medical Education, Scott and White, 2401 South 31st Street, Temple, TX 76508. 817/774-2350.

23 **Thomas F. Maher Lecture in Radiology** — Location: St. John's Mercy Medical Center, von Gontard Conference Center, St. Louis, MO. Contact: Judith L. O'Guin, St. John's Mercy Medical Center, 615 S. New Ballas Rd., St. Louis, MO 63141-8221. 314/569-6290.

September

8 - 9 **Combined TGS/TPA Scientific Assembly: Aging and Mental Illness** — Location: Stouffer Nashville Hotel, Nashville Convention Center, Nashville, TN. Contact: James S. Powers, M.D., *President-Elect*, TGS, Vanderbilt University Medical Center, Division of General Internal Medicine, Nashville, TN 37232. 615/322-2547 or 615/242-1505.

10 **19th Annual Wendell G. Scott Lecture: The Relative Value of Radiology** — Location: Mallinckrodt Institute of Radiology, St. Louis, MO. Contact: Ronald G. Evens, M.D., Mallinckrodt Institute of Radiology, 510 S. Kingshighway, St. Louis, MO 63110. 314/362-7100.

11 - 13 **Introduction To Doppler Echocardiography** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: Kathleen Habermehl, Continuing Medical Education, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8897.

12 **The Fifth Annual John V. King, M.D. Family Practice Symposium** — Location: St. John's Mercy Medical Center, von Gontard Conference Center, St. Louis, MO. Contact: Judith L. O'Guin, St. John's Mercy Medical Center, 615 S. New Ballas Road, St. Louis, MO 63141-8221. 314/569-6290.

14 - 15 **Dermatology** — Location: Holiday Inn Executive Center, Columbia, MO. Contact: Barry Kling, University of Missouri-Columbia School of Medicine, Office of Continuing Education, MA215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

14 - 15 **2nd Annual Update Course in Ophthalmology** — Location: Washington University School of Medicine, St. Louis, MO. Contact: Kathy Ryan, Box 8096, 660 S. Euclid Ave., St. Louis, MO 63110. 314/362-5722.

17 - 19 **Memory Function in Aging and Aging Related Changes Symposium** — Location: Clarion Hotel, St. Louis, MO. Contact: Ms. Carolyn Leach, Conference Secretary, VA Medical Center, GRECC(111G-JB), St. Louis, MO 63125. 314/894-6510.

19 **Third Annual Trauma Care Conference** — Location: St. John's Mercy Medical Center, von Gontard Conference Center, St. Louis, MO. Contact: Judith L. O'Guin, St. John's Mercy Medical Center, 615 S. New Ballas Road, St. Louis, MO 63141-8221. 314/569-6290.

October

3 **Update in Psychiatry** — Location: St. John's Mercy Medical Center, von Gontard Conference Center, St. Louis, MO. Contact: Judith L. O'Guin, St. John's Mercy Medical Center, 615 S. New Ballas Road, St. Louis, MO 63141-8221. 314/569-6290.

5 - 6 **33rd Annual Alumni Weekend** — Location: CME Auditorium, MA217, University of Missouri School of Medicine, Columbia, MO. Contact: Barry Kling, Office of Continuing Education, MA 215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

5 - 7 **Ozark Chest Conference X: Pulmonary Fibrosis, Pulmonary Rehabilitation and Nocturnal Ventilation** — Location: Tan-Tar-A Resort Hotel, Lake of the Ozarks, MO. Contact: American Lung Association of Western Missouri, 2007 Broadway, Kansas City, MO 64108. 816/842-5242.

8 **City-Wide Radiology Conference: MRI of the Knee - Present and Future** — Location: Mallinckrodt Institute of Radiology, Washington University School of Medicine, St. Louis, MO. Contact: R. Gilbert Jost, M.D., Chief of Diagnostic Radiology, Mallinckrodt Institute of Radiology, 510 S. Kingshighway, St. Louis, MO 63110. 314/362-7130.

19 **Rheumatology 1990** — Location: Lodge of the Four Seasons, Lake Ozark, MO. Contact: Barry Kling, University of Missouri-Columbia School of Medicine, Office of Continuing Education, MA215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

19 - 21 **Missouri Chapter of American College of Physicians and Missouri Society of Internal Medicine, Regional Meeting** — Location: Lodge of the Four Seasons, Lake Ozark, MO. Contact: Mary Ann Morris, P.O. Box 1953, Lee't Summit, MO 64063. 816/525-5800.

26 - 27 **Black Health Care** — Location: Allis Plaza Hotel, Kansas City, MO. Contact: Barry Kling, University of Missouri-Columbia School of Medicine, Office of Continuing Education, MA215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

26 - 27 **Endoscopic & Laser Surgery: Advances, Complications and Controversies** — Location: St. Luke's Hospital, St. Louis, MO. Contact: Patty Fogerty, Program Coordinator, Dept. of Education, St. Luke's Hospital Institute for Health Education, 232 South Woods Mill Road, St. Louis, MO 63017. 314/851-6006.

November

1 - 3 **68th Annual Fall Conference** — Location: Ritz-Carlton Hotel, Kansas City, MO. Contact: Linda F. Smutz, Kansas City Southwest Clinical Society, 7920 Ward Parkway, Suite 205, Kansas City, MO 64114. 816/523-3383.

1 - 3 **Clinical Allergy for the Practicing Physician** — Location: Ritz-Carlton Hotel, St. Louis, MO. Contact: Cathy Caruso, Office of Continuing Medical Education, Washington University School of Medicine, 660 S. Euclid, Box 8063, St. Louis, MO 63110. 314/325-9862 or 362-6893.

9 - 10 **OB-GYN Update** — Location: Holiday Inn Executive Center, Columbia, MO. Contact: Barry Kling, University of Missouri-Columbia School of Medicine, Office of Continuing Education, MA215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

9 - 11 **16th Annual Symposium: Anesthesia and the Geriatric Patient** — Location: Marriott Pavilion Hotel, One Broadway, St. Louis, MO. Contact: S. Mark Poler, M.D., Geriatric Symposium, Dept. of Anesthesiology, Box 8054, Washington University School of Medicine, 660 S. Euclid, St. Louis, MO 63110. 314/362-6973.

12 **City-Wide Radiology Conference** — Location: Mallinckrodt Institute of Radiology, St. Louis, MO. Contact: R. Gilbert Jost, M.D., Chief of Diagnostic Radiology, Mallinckrodt Institute of Radiology, 510 S. Kingshighway, St. Louis, MO 63110. 314/362-7130.

25 - 28 **Clinical Allergy — Inhalant and Food Sensitivity "Review and How-To"** — Location: Ritz-Carlton Hotel, Kansas City, MO. Contact: James W. Willoughby, M.D., Director, Missouri Postgraduate Course in Allergy, Inc., Suite A, 24-26 South Main Street, Liberty, MO 64068. 816/781-0902.

December

10 **City-Wide Radiology Conference: Color Flow Doppler - Update 1990** — Location: Mallinckrodt Institute of Radiology, St. Louis, MO. Contact: R. Gilbert Jost, M.D., Chief of Diagnostic Radiology, Mallinckrodt Institute of Radiology, 510 S. Kingshighway, St. Louis, MO 63110. 314/362-7130.

Patient Information Page

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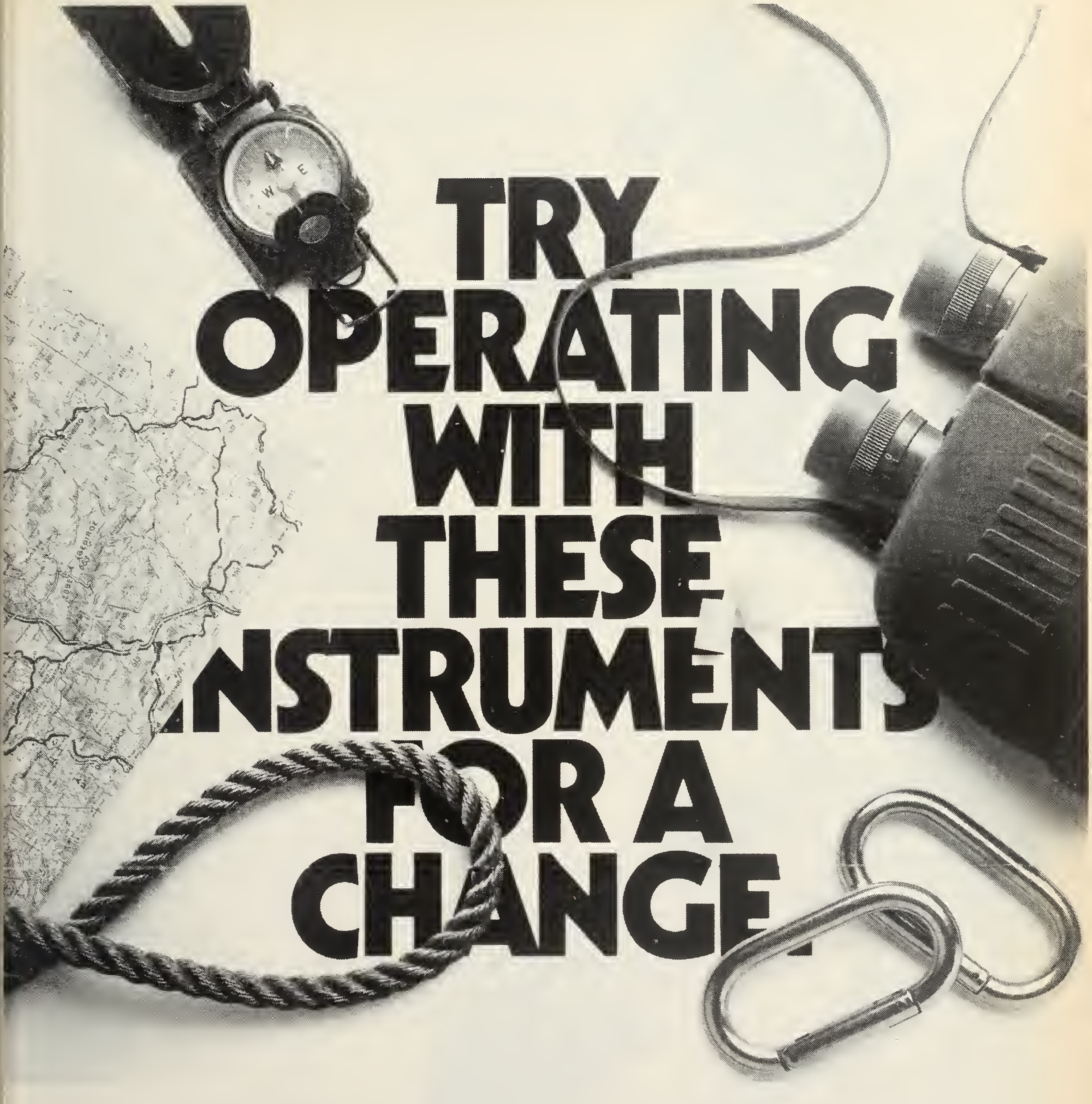

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References should be cited in numerical order in the text and arranged at the end of the article in the same order in which they are cited. The reference should give name of author, title of article, name of periodical, volume number, initial page number and year. Authors are responsible for reference accuracy.

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Letters will be published at the discretion of the editor, managing editor, and Editorial Board.

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Action: Yohimbine blocks presynaptic alpha-2 adrenergic receptors. Its action on peripheral blood vessels resembles that of reserpine, though it is weaker and of short duration. Yohimbine's peripheral autonomic nervous system effect is to increase parasympathetic (cholinergic) and decrease sympathetic (adrenergic) activity. It is to be noted that in male sexual performance, erection is linked to cholinergic activity and to alpha-2 adrenergic blockade which may theoretically result in increased penile inflow, decreased penile outflow or both.

Yohimbine exerts a stimulating action on the mood and may increase anxiety. Such actions have not been adequately studied or related to dosage although they appear to require high doses of the drug. Yohimbine has a mild anti-diuretic action, probably via stimulation of hypothalmic centers and release of posterior pituitary hormone.

Reportedly, Yohimbine exerts no significant influence on cardiac stimulation and other effects mediated by B-adrenergic receptors, its effect on blood pressure, if any, would be to lower it; however no adequate studies are at hand to quantitate this effect in terms of Yohimbine dosage.

Indications: Yocon® is indicated as a sympathicolytic and mydriatric. It may have activity as an aphrodisiac.

Contraindications: Renal diseases, and patient's sensitive to the drug. In view of the limited and inadequate information at hand, no precise tabulation can be offered of additional contraindications.

Warning: Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

Adverse Reactions: Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral a-adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.[1,2] Also dizziness, headache, skin flushing reported when used orally.[1,3]

Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.[1,3,4] 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to ½ tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.[3]

How Suppiled: Oral tablets of Yocon® 1/12 gr. 5.4 mg in bottles of 100's NDC 53159-001-01 and 1000's NDC 53159-001-10.

References:

1. A. Morales et al., New England Journal of Medicine: 1221. November 12, 1981.
2. Goodman, Gilman — The Pharmacological basis of Therapeutics 6th ed., p. 176-188. McMillan December Rev. 1/85.
3. Weekly Urological Clinical letter, 27:2, July 4, 1983.
4. A. Morales et al., The Journal of Urology 128: 45-47, 1982.

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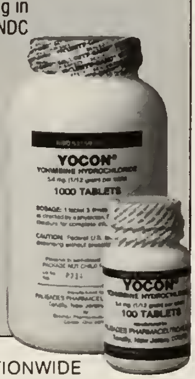

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EMERGENCY MEDICINE IN IL AND MO — Full and part-time positions available in emergency departments for qualified physicians seeking lucrative employment opportunities. Outstanding remuneration and comprehensive malpractice insurance provided. For further information contact: Felicia Hershkowitz, Wayne Ackerson or Donna Troiana, staffing specialist, National Emergency Services, Inc., 255 Executive Drive, Suite 104, Plainview, NY 11803 or call 1-800-645-4848 or 516/349-0100.

INTERNIST WANTED. BE/BC to join the medical staff of the Samuel U. Rodgers Health Center. Provides an opportunity to practice in an outpatient setting with inpatient activities and faculty appointment at the local medical school. Competitive salary and fringe benefits. Excellent hours and call schedule. Send C.V.: Jay T. Backstrom, M.D., Medical Director, 825 Euclid, Kansas City, MO 64124.

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INTERNIST — POPLAR BLUFF, MO. The John J. Pershing VA Medical Center, a 225-bed General Medical, Surgical and Psychiatric Hospital, is seeking QUALITY BC/BE Internists to join our dedicated staff. Excellent opportunity to practice medicine without many of the hassles of private practice and be able to enjoy almost "normal" hours. Other benefits include low cost health/life insurance, very good vacation/sick leave, three-tier retirement plan with 401(K) type option, no need for malpractice insuance, and a community with one of the lowest cost-of-living in U.S. Interested physicians should contact Chief of Staff (11), John J. Pershing VA Medical Center, Poplar Bluff, MO 63901 or call 314/686-4151, extension 201. EOE.

PEDIATRICIAN — BC/BE. Join two partners in a 23-physician group. New hospital planned. Competitive salary and benefits. Early partnership. Triple A rated schools. Exceptional recreational area. Contact: Richard Motley, Manager, The Hannibal Clinic, 711 Grand, Hannibal, MO 63401. 314/221-5250.

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GENERAL INTERNIST — With Intensive Care experience needed to join solo internist with busy practice in Kansas City, MO. Practice restricted and next to 560-bed hospital with academic affiliations. Board certified, board eligible, American trained only. Guaranteed salary negotiable, benefits, and association leading to early partnership. Send CV and 4 references to John Michael Moore, M.D., 6400 Prospect, Suite 238, Kansas City, MO 64132.

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Physicians Wanted

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OCCUPATIONAL MEDICINE OPPORTUNITY. St. Anthony's Medical Center is seeking a physician to spearhead the development of its Occupational Medicine Program. Board certified primary care physicians with a strong interest in OM are preferred. Located in prospering south St. Louis County, Missouri, St. Anthony's is St. Louis' premiere community hospital. The OM program currently serves more than 40 companies and rapid expansion is anticipated. The position offers excellent working conditions, hours, benefits, and salary. Send CV to Raana Ponstingle, M.D., 10010 Kennerly Rd., St. Louis, MO 63128 or call 314/525-1905.

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RADIOLOGISTS needed for several openings in: Myrtle Beach, SC; Omaha, NE; Alamogordo, NM; and several other exciting locations. As an Air Force officer, you'll practice quality medicine on quality people – where the patient's needs come first. (Applicants must be on active duty before their 58th birthday.) Reach for new heights. Call STAT! 1-800-531-5980. Or send CV to Colonel William E. Patterson, HQ USAFRS/RSH, Randolph AFB, TX 78150.

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VASOTEC®

(ENALAPRIL MALEATE | MSD)

VASOTEC is available in 2.5-mg, 5-mg, 10-mg, and 20-mg tablet strengths.

Contraindications: VASOTEC® (Enalapril Maleate, MSD) is contraindicated in patients who are hypersensitive to this product and in patients with a history of angioedema related to previous treatment with an ACE inhibitor.

Warnings: *Angioedema.* Angioedema of the face, extremities, lips, tongue, glottis, and/or larynx has been reported in patients treated with ACE inhibitors, including VASOTEC. In such cases, VASOTEC should be promptly discontinued and the patient carefully observed until the swelling disappears. In instances where swelling has been confined to the face and lips, the condition has generally resolved without treatment, although antihistamines have been useful in relieving symptoms. Angioedema associated with laryngeal edema may be fatal. **Where there is involvement of the tongue, glottis, or larynx likely to cause airway obstruction, appropriate therapy, e.g., subcutaneous epinephrine solution 1:1000 (0.3 mL to 0.5 mL), should be promptly administered.** (See ADVERSE REACTIONS.)

Hypotension. Excessive hypotension is rare in uncomplicated hypertensive patients treated with VASOTEC alone. Patients with heart failure given VASOTEC commonly have some reduction in blood pressure, especially with the first dose, but discontinuation of therapy for continuing symptomatic hypotension usually is not necessary when dosing instructions are followed; caution should be observed when initiating therapy. (See DOSAGE AND ADMINISTRATION.) Patients at risk for excessive hypotension, sometimes associated with oliguria and/or progressive azotemia and rarely with acute renal failure and/or death, include those with the following conditions or characteristics: heart failure, hyponatremia, high-dose diuretic therapy, recent intensive diuresis or increase in diuretic dose, renal dialysis, or severe volume and/or salt depletion of any etiology. It may be advisable to eliminate the diuretic (except in patients with heart failure), reduce the diuretic dose, or increase salt intake cautiously before initiating therapy with VASOTEC in patients at risk for excessive hypotension who are able to tolerate such adjustments. (See PRECAUTIONS, *Drug Interactions* and ADVERSE REACTIONS.) In patients at risk for excessive hypotension, therapy should be started under very close medical supervision and such patients should be followed closely for the first two weeks of treatment and whenever the dose of enalapril and/or diuretic is increased. Similar considerations may apply to patients with ischemic heart disease or cardiovascular disease in whom an excessive fall in blood pressure could result in a myocardial infarction or cerebrovascular accident. If excessive hypotension occurs, the patient should be placed in the supine position and, if necessary, receive an intravenous infusion of normal saline. A transient hypotensive response is not a contraindication to further doses of VASOTEC, which usually can be given without difficulty once the blood pressure has stabilized. If symptomatic hypotension develops, a dose reduction or discontinuation of VASOTEC or concomitant diuretic may be necessary.

Neutropenia/Agranulocytosis: Another ACE inhibitor, captopril, has been shown to cause agranulocytosis and bone marrow depression, rarely in uncomplicated patients but more frequently in patients with renal impairment, especially if they also have a collagen vascular disease. Available data from clinical trials of enalapril are insufficient to show that enalapril does not cause agranulocytosis at similar rates. Foreign marketing experience has revealed several cases of neutropenia or agranulocytosis in which a causal relationship to enalapril cannot be excluded. Periodic monitoring of white blood cell counts in patients with collagen vascular disease and renal disease should be considered.

Precautions: *General. Impaired Renal Function.* As a consequence of inhibiting the renin-angiotensin-aldosterone system, changes in renal function may be anticipated in susceptible individuals. In patients with severe heart failure whose renal function may depend on the activity of the renin-angiotensin-aldosterone system, treatment with ACE inhibitors, including VASOTEC, may be associated with oliguria and/or progressive azotemia and rarely with acute renal failure and/or death.

In clinical studies in hypertensive patients with unilateral or bilateral renal artery stenosis, increases in blood urea nitrogen and serum creatinine were observed in 20% of patients. These increases were almost always reversible upon discontinuation of enalapril and/or diuretic therapy. In such patients, renal function should be monitored during the first few weeks of therapy.

Some patients with hypertension or heart failure with no apparent preexisting renal vascular disease have developed increases in blood urea and serum creatinine, usually minor and transient, especially when VASOTEC has been given concomitantly with a diuretic. This is more likely to occur in patients with preexisting renal impairment. Dosage reduction and/or discontinuation of the diuretic and/or VASOTEC may be required.

Evaluation of patients with hypertension or heart failure should always include assessment of renal function. (See DOSAGE AND ADMINISTRATION.)

Hyperkalemia. Elevated serum potassium (>5.7 mEq/L) was observed in approximately 1% of hypertensive patients in clinical trials. In most cases these were isolated values which resolved despite continued therapy. Hyperkalemia was a cause of discontinuation of therapy in 0.28% of hypertensive patients. In clinical trials in heart failure, hyperkalemia was observed in 3.8% of patients, but was not a cause for discontinuation.

Risk factors for the development of hyperkalemia include renal insufficiency, diabetes mellitus, and the concomitant use of potassium-sparing diuretics, potassium supplements, and/or potassium-containing salt substitutes, which should be used cautiously, if at all, with VASOTEC. (See *Drug Interactions*.)

Surgery/Anesthesia. In patients undergoing major surgery or during anesthesia with agents that produce hypotension, enalapril may block angiotensin II formation secondary to compensatory renin release. If hypotension occurs and is considered to be due to this mechanism, it can be corrected by volume expansion.

Information for Patients

Angioedema. Angioedema, including laryngeal edema, may occur especially following the first dose of enalapril. Patients should be so advised and told to report immediately any signs or symptoms suggesting angioedema (swelling of face, extremities, eyes, lips, tongue, difficulty in swallowing or breathing) and to take no more drug until they have consulted with the prescribing physician.

Hypotension. Patients should be cautioned to report lightheadedness, especially during the first few days of therapy. If actual syncope occurs, the patients should be told to discontinue the drug until they have consulted with the prescribing physician.

All patients should be cautioned that excessive perspiration and dehydration may lead to an excessive fall in blood pressure because of reduction in fluid volume. Other causes of volume depletion such as vomiting or diarrhea may also lead to a fall in blood pressure; patients should be advised to consult with the physician.

Hyperkalemia: Patients should be told not to use salt substitutes containing potassium without consulting their physician.

Neutropenia. Patients should be told to report promptly any indication of infection (e.g., sore throat, fever) which may be a sign of neutropenia.

NOTE: As with many other drugs, certain advice to patients being treated with enalapril is warranted. This information is intended to aid in the safe and effective use of this medication. It is not a disclosure of all possible adverse or intended effects.

Drug Interactions.

Hypotension. Patients on Diuretic Therapy: Patients on diuretics and especially those in whom diuretic therapy was recently instituted may occasionally experience an excessive reduction of blood pressure after initiation of therapy with enalapril. The possibility of hypotensive effects with enalapril can be minimized by either discontinuing the diuretic or increasing the salt intake prior to initiation of treatment with enalapril. If it is necessary to continue the diuretic, provide close medical supervision after the initial dose for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and DOSAGE AND ADMINISTRATION.)

Agents Causing Renin Release: The antihypertensive effect of VASOTEC is augmented by antihypertensive agents that cause renin release (e.g., diuretics).

Other Cardiovascular Agents: VASOTEC has been used concomitantly with beta-adrenergic-blocking agents, methyldopa, nitrates, calcium-blocking agents, hydralazine, prazosin, and digoxin without evidence of clinically significant adverse interactions.

Agents Increasing Serum Potassium. VASOTEC attenuates potassium loss caused by thiazide-type diuretics. Potassium-sparing diuretics (e.g., spironolactone, triamterene, or amiloride), potassium supplements, or potassium-containing salt substitutes may lead to significant increases in serum potassium. Therefore, if concomitant use of these agents is indicated because of demonstrated hypokalemia, they should be used with caution and with frequent monitoring of serum potassium. Potassium-sparing agents should generally not be used in patients with heart failure receiving VASOTEC.

Lithium: Lithium toxicity has been reported in patients receiving lithium concomitantly with drugs which cause elimination of sodium, including ACE inhibitors. A few cases of lithium toxicity have been reported in patients receiving concomitant VASOTEC and lithium and were reversible upon discontinuation of both drugs. It is recommended that serum lithium levels be monitored frequently if enalapril is administered concomitantly with lithium.

Pregnancy – Category C: There was no fetotoxicity or teratogenicity in rats treated with up to 200 mg/kg/day of enalapril (333 times the maximum human dose). Fetotoxicity, expressed as a decrease in average fetal weight, occurred in rats given 1200 mg/kg/day of enalapril but did not occur when these animals were supplemented with saline. Enalapril was not teratogenic in rabbits. However, maternal and fetal toxicity occurred in some rabbits at doses of 1 mg/kg/day or more. Saline supplementation prevented the maternal and fetal toxicity seen at doses of 3 and 10 mg/kg/day, but not at 30 mg/kg/day (50 times the maximum human dose).

Radioactivity was found to cross the placenta following administration of labeled enalapril to pregnant hamsters.

There are no adequate and well-controlled studies of enalapril in pregnant women. However, data are available that show enalapril crosses the human placenta. Because the risk of fetal toxicity with the use of ACE inhibitors has not been clearly defined, VASOTEC® (Enalapril Maleate, MSD) should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Postmarketing experience with all ACE inhibitors thus far suggests the following with regard to pregnancy outcome. Inadvertent exposure limited to the first trimester of pregnancy has not been reported to affect fetal outcome adversely. Fetal exposure during the second and third trimesters of pregnancy has been associated with fetal and neonatal morbidity and mortality.

When ACE inhibitors are used during the later stages of pregnancy, there have been reports of hypotension and decreased renal perfusion in the newborn. Oligohydramnios in the mother has also been reported, presumably representing decreased renal function in the fetus. Infants exposed *in utero* to ACE inhibitors should be closely observed for hypotension, oliguria, and hyperkalemia. If oliguria occurs, attention should be directed toward support of blood pressure and renal perfusion with the administration of fluids and pressors as appropriate. Problems associated with prematurity such as patent ductus arteriosus have occurred in association with maternal use of ACE inhibitors, but it is not clear whether they are related to ACE inhibition, maternal hypertension, or the underlying prematurity.

Nursing Mothers: Milk in lactating rats contains radioactivity following administration of ^{14}C enalapril maleate. It is not known whether this drug is secreted in human milk. Because many drugs are secreted in human milk, caution should be exercised when VASOTEC is given to a nursing mother.

Pediatric Use. Safety and effectiveness in children have not been established.

Adverse Reactions: VASOTEC has been evaluated for safety in more than 10,000 patients, including over 1000 patients treated for one year or more. VASOTEC has been found to be generally well tolerated in controlled clinical trials involving 2987 patients.

HYPERTENSION. The most frequent clinical adverse experiences in controlled trials were: headache (5.2%), dizziness (4.3%), and fatigue (3%).

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in controlled clinical trials were: diarrhea (1.4%), nausea (1.4%), rash (1.4%), cough (1.3%), orthostatic effects (1.2%), and asthenia (1.1%).

HEART FAILURE. The most frequent clinical adverse experiences in both controlled and uncontrolled trials were: dizziness (7.9%), hypotension (6.7%), orthostatic effects (2.2%), syncope (2.2%), cough (2.2%), chest pain (2.1%), and diarrhea (2.1%).

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in both controlled and uncontrolled clinical trials were: fatigue (1.8%), headache (1.8%), abdominal pain (1.6%), asthenia (1.6%), orthostatic hypotension (1.6%), vertigo (1.6%), angina pectoris (1.5%), nausea (1.3%), vomiting (1.3%), bronchitis (1.3%), dyspnea (1.3%), urinary tract infection (1.3%), rash (1.3%), and myocardial infarction (1.2%).

Other serious clinical adverse experiences occurring since the drug was marketed or adverse experiences occurring in 0.5% to 1% of patients with hypertension or heart failure in clinical trials in order of decreasing severity within each category.

Cardiovascular. Cardiac arrest, myocardial infarction or cerebrovascular accident, possibly secondary to excessive hypotension in high-risk patients (see WARNINGS, *Hypotension*); pulmonary embolism and infarction, pulmonary edema, rhythm disturbances, atrial fibrillation, palpitation.

Digestive. Ileus, pancreatitis, hepatitis (hepatocellular or cholestatic jaundice), melena, anorexia, dyspepsia, constipation, glossitis, stomatitis, dry mouth.

Musculoskeletal: Muscle cramps.

Nervous/Psychiatric. Depression, confusion, ataxia, somnolence, insomnia, nervousness, paresthesia.

Urogenital. Renal failure, oliguria, renal dysfunction (see PRECAUTIONS and DOSAGE AND ADMINISTRATION).

Respiratory. Bronchospasm, rhinorrhea, sore throat and hoarseness, asthma, upper respiratory infection.

Skin: Exfoliative dermatitis, toxic epidermal necrolysis, Stevens-Johnson syndrome, herpes zoster, erythema multiforme, urticaria, pruritus, alopecia, flushing, hyperhidrosis.

Special Senses. Blurred vision, taste alteration, anosmia, tinnitus, conjunctivitis, dry eyes, tearing.

A symptom complex has been reported which may include a positive ANA, an elevated erythrocyte sedimentation rate, arthralgias/arthritis, myalgias, fever, serositis, vasculitis, leukocytosis, eosinophilia, photosensitivity, rash, and other dermatologic manifestations.

Angioedema. Angioedema has been reported in patients receiving VASOTEC (0.2%). Angioedema associated with laryngeal edema may be fatal. If angioedema of the face, extremities, lips, tongue, glottis, and/or larynx occurs, treatment with VASOTEC should be discontinued and appropriate therapy instituted immediately. (See WARNINGS.)

Hypotension. In the hypertensive patients, hypotension occurred in 0.9% and syncope occurred in 0.5% of patients following the initial dose or during extended therapy. Hypotension or syncope was a cause for discontinuation of therapy in 0.1% of hypertensive patients. In heart failure patients, hypotension occurred in 6.7% and syncope occurred in 2.2% of patients. Hypotension or syncope was a cause for discontinuation of therapy in 1.9% of patients with heart failure. (See WARNINGS.)

Clinical Laboratory Test Findings:

Serum Electrolytes: Hyperkalemia (see PRECAUTIONS), hyponatremia.

Creatinine, Blood Urea Nitrogen. In controlled clinical trials, minor increases in blood urea nitrogen and serum creatinine, reversible upon discontinuation of therapy, were observed in about 0.2% of patients with essential hypertension treated with VASOTEC alone. Increases are more likely to occur in patients receiving concomitant diuretics or in patients with renal artery stenosis. (See PRECAUTIONS.) In patients with heart failure who were also receiving diuretics with or without digitalis, increases in blood urea nitrogen or serum creatinine, usually reversible upon discontinuation of VASOTEC and/or other concomitant diuretic therapy, were observed in about 11% of patients. Increases in blood urea nitrogen or creatinine were a cause for discontinuation in 1.2% of patients.

Hemoglobin and Hematocrit. Small decreases in hemoglobin and hematocrit (mean decreases of approximately 0.3 g% and 1.0 vol %, respectively) occur frequently in either hypertension or heart failure patients treated with VASOTEC but are rarely of clinical importance unless another cause of anemia coexists. In clinical trials, less than 0.1% of patients discontinued therapy due to anemia.

Other (Causal Relationship Unknown): In marketing experience, rare cases of neutropenia, thrombocytopenia, and bone marrow depression have been reported. A few cases of hemolysis have been reported in patients with G6PD deficiency.

Liver Function Tests. Elevations of liver enzymes and/or serum bilirubin have occurred.

Dosage and Administration: *Hypertension:* In patients who are currently being treated with a diuretic, symptomatic hypotension occasionally may occur following the initial dose of VASOTEC. The diuretic should, if possible, be discontinued for two to three days before beginning therapy with VASOTEC to reduce the likelihood of hypotension. (See WARNINGS.) If the patient's blood pressure is not controlled with VASOTEC alone, diuretic therapy may be resumed.

If the diuretic cannot be discontinued, an initial dose of 2.5 mg should be used under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and PRECAUTIONS, *Drug Interactions*.)

The recommended initial dose in patients not on diuretics is 5 mg once a day. Dosage should be adjusted according to blood pressure response. The usual dosage range is 10 to 40 mg per day administered in a single dose or in two divided doses. In some patients treated once daily, the antihypertensive effect may diminish toward the end of the dosing interval. In such patients, an increase in dosage or twice-daily administration should be considered. If blood pressure is not controlled with VASOTEC alone, a diuretic may be added.

Concomitant administration of VASOTEC with potassium supplements, potassium salt substitutes, or potassium-sparing diuretics may lead to increases of serum potassium (see PRECAUTIONS).

Dosage Adjustment in Hypertensive Patients with Renal Impairment. The usual dose of enalapril is recommended for patients with a creatinine clearance > 30 mL/min (serum creatinine of up to approximately 3 mg/dL). For patients with creatinine clearance ≤ 30 mL/min (serum creatinine ≥ 3 mg/dL), the first dose is 2.5 mg once daily. The dosage may be titrated upward until blood pressure is controlled or to a maximum of 40 mg daily.

Heart Failure: VASOTEC is indicated as adjunctive therapy with diuretics and digitalis. The recommended starting dose is 2.5 mg once or twice daily. After the initial dose of VASOTEC, the patient should be observed under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and PRECAUTIONS, *Drug Interactions*.) If possible, the dose of the diuretic should be reduced, which may diminish the likelihood of hypotension. The appearance of hypotension after the initial dose of VASOTEC does not preclude subsequent careful dose titration with the drug, following effective management of the hypotension. The usual therapeutic dosing range for the treatment of heart failure is 5 to 20 mg daily given in two divided doses. The maximum daily dose is 40 mg. Once-daily dosing has been effective in a controlled study, but nearly all patients in this study were given 40 mg, the maximum recommended daily dose, and there has been much more experience with twice-daily dosing. In addition, in a placebo-controlled study which demonstrated reduced mortality in patients with severe heart failure (NYHA Class IV), patients were treated with 2.5 to 40 mg per day of VASOTEC, almost always administered in two divided doses. (See CLINICAL PHARMACOLOGY, *Pharmacodynamics and Clinical Effects*.) Dosage may be adjusted depending upon clinical or hemodynamic response. (See WARNINGS.)

Dosage Adjustment in Patients with Heart Failure and Renal Impairment or Hyponatremia. In patients with heart failure who have hyponatremia (serum sodium < 130 mEq/L) or with serum creatinine >1.6 mg/dL, therapy should be initiated at 2.5 mg daily under close medical supervision. (See DOSAGE AND ADMINISTRATION, *Heart Failure*, WARNINGS, and PRECAUTIONS, *Drug Interactions*.) The dose may be increased to 2.5 mg b.i.d., then 5 mg b.i.d. and higher as needed, usually at intervals of four days or more, if at the time of dosage adjustment there is not excessive hypotension or significant deterioration of renal function. The maximum daily dose is 40 mg.

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Journal of the Missouri State Medical Association

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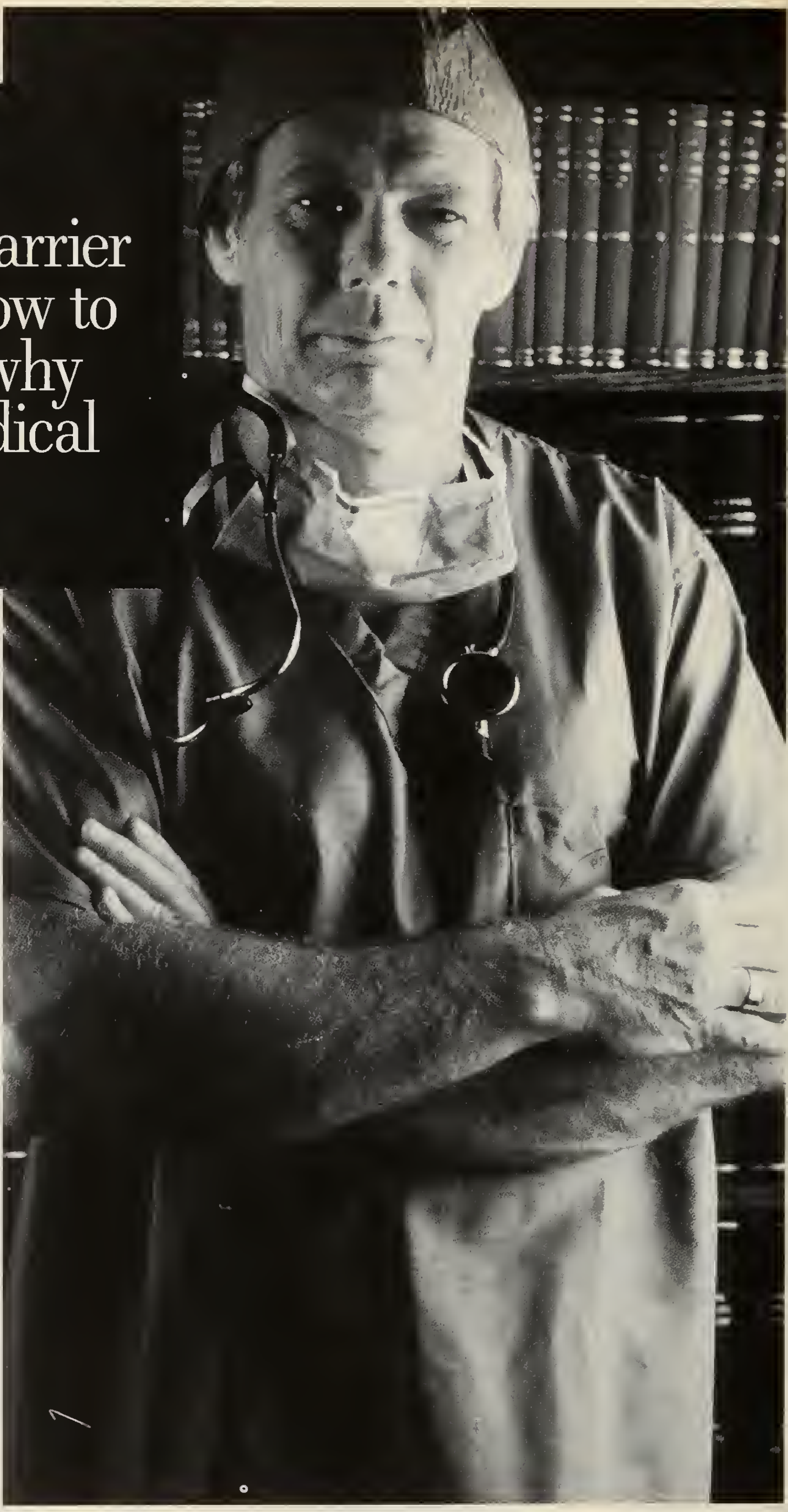

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COMMENTARY

by Leopoldo P. Pardo, Jr., M.D.

Dr. Pardo was born in Manila, the Philippines and obtained his medical degree in 1955 at the University of the Philippines. Dr. Pardo is a neurosurgeon practicing in St. Louis, Missouri.

The Need for An FMG Section in MSMA — Reflections of an Interested Party

Ten years ago (or thereabouts), I filed a resolution at the MSMA annual meeting on the subject of increased representation of FMGs (Graduates of Foreign Medical Schools — GFMs, as they want to be characterized now) in the power structures of organized medicine. It was defeated both at the local society level (St. Louis Metropolitan Medical Society) and at the MSMA level.

During the committee hearings (it never got to the floor), many FMGs testified against the resolution, not wanting to be separated as a group outside the general membership. Some United States graduates who spoke up insisted the action represented a "quota" system that the majority did not desire and the group did not deserve. I was surprised that many other U.S. graduates testified for it, however. I took everything in my heart and continued to participate in organized medicine, albeit with somewhat lukewarm efforts. I served as a Delegate to the MSMA from the SLMMS and a Councilor in the SLMMS. I subsequently personally donated, as well as solicited a donation from the Philippine Medical Association of St. Louis (PMA) toward the SLMMS building fund and/or the Sesquicentennial fund — enough to get both our names printed on the plaque now hanging at the lobby entrance of the rejuvenated SLMMS Lindell Building.

This year a similar resolution was introduced by myself and Dr. Louis Anglo to the St. Louis Metropolitan Medical Society, which decided to sponsor it after much discussion. This year's resolution was somewhat bold in that it recommended the formation of an FMG section in the MSMA, similar to the Student Section and the Resident Section. The resolution also encouraged following the lead of the Michigan, Arizona and New Jersey state medical societies. It was again defeated on the MSMA floor after making it through the reference committee unscathed. A substitute resolution was offered by the Metropolitan Medical Society of Greater Kansas City, which in effect defeated the principle of my original. Similar reasons were used by various speakers against the resolution as last time.

At this point I am faced with two options: withdraw from the MSMA and the AMA, or bring in a whole new bunch of FMGs on the promise of increased participation, if not representation, to demonstrate to the main body of MSMA members that we have the leadership and the numbers to boost the MSMA membership.

Nevertheless, an Ad Hoc committee was recommended in its place. This present article purports to keep the idea alive. It purports to alert the Ad Hoc committee, when such committee is formed by the Council, that the idea will not disappear.

Let us discuss some of the opinions expressed by the various delegates. Let us start with the

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negative views stated about this idea.

1. Opponents say that an FMG section will be "divisive;" that it tends to create a subclass of persons separated from the mainstream of the medical society.

My answer: On the contrary, an FMG section will tend to keep this group within the mainstream of organized medicine, instead of their forming ethnic medical groups, with their own agenda, CME, and side shows. Such an event is now occurring, and I can name the individual groups. Such groups are drawing membership and CME money away from the MSMA and the AMA. Such groups have the power and finances to lobby directly with politicians on FMG issues, which may be all that ethnic groups may want out of "organized medicine." God help "organized medicine" when all these ethnic groups discover that they can achieve within their own ethnic medical societies all that the AMA and MSMA can do for them. They do constitute 1/6 to 1/4 of practicing physicians in the State of Missouri. And politicians only know the color of money.

2. Opponents say, "next thing you know, the blacks, the women, etc... will be asking for a section." If the women have made it to the "top" without having a special section, why can't the FMGs do the same?

My answer: The FMGs have entirely different issues to contend with than local graduates, be they Blacks or women. In order to get a fair hearing for their concerns they need a separate forum to distill their ideas and intentions before being diluted in the mainstream. Besides, blacks and women constitute a very small minority of medical practitioners in Missouri, compared to the FMGs. There wouldn't be enough numbers to keep an auditorium warm. However, in the national scheme, when sufficient numbers of blacks or women have found insufficient forums, they have formed their own groups like the NOW and the NAACP (Pardon me for lumping them together).

3. Opponents say the FMGs should "climb" the corporate ladder on their own merits instead of being given special consideration or a push, so to speak (or a kick in the butt, in more picturesque terms).

My answer: I have been waiting these past 15 years to see some evidence of such climb and there simply is no evidence of any significant representation by these people. Like someone said in another venue, if not now, WHEN?

Let me mention some positive aspects:

1. The FMGs do have legitimate concerns that do not affect the "mainstream" of U.S. graduates. These concerns continue to buffet them despite having been in legitimate practice of medicine in Missouri for many years.

2. The FMGs have great difficulty in bringing these concerns into a largely U.S. graduate forum for many reasons.

3. FMGs have trouble expressing themselves. They have accents which may be hard to understand in the Midwest. Their syntax may not be perfect. But among themselves they strain to be understood, and they exercise patience with each other on this item.

It is on this point I feel strongly that a campaign for increased FMG membership in the MSMA will have a strong impact.

4. Opponents have trouble being "recognized" — the hands they keep waving are short.

If they had their own forum, but still within the larger confines of organized medicine, their distilled ideas could be brought forward by their more facile leaders to the mainstream leaders and thus be heard, accommodated, or otherwise entertained.

That three state societies have established an FMG section is strong reason that the need should be recognized by other similar organizations. Although the creation of a special section has been defeated a couple of times on the floor of the AMA House of Delegates, the AMA officers recognized the need to keep track of them and did establish a "department" of FMGs. This is a good start. But since all policies are debated and resolved in the House, any FMG worth his political salt will quickly realize where he should have a place.

Frankly, the clamor will not die until the present group fades away. And they will. Since the gates have been closed and Father Time marches on. ■

OPINION

Refusing Life-Sustaining Medical Treatment:

Evan K. Saunders, M.D.
Chicago, Illinois

In the wake of recent abortion decisions, the courts today face an increasing number of questions regarding the State's role in the preservation and sanctity of human life. From the point of conception to the brink of death, certain guidelines have been established to preserve and protect the right-to-life as declared by common law. However, at the extremes of this existence either before birth or near infirmity, the guidelines seem to be less clear-cut. For example, we allow abortions, but condemn infanticide. Likewise, we outlaw suicide, but respect the wishes of the infirm in some cases to refuse life-sustaining medical treatment. Under question is how these decisions are made and under what circumstances is the active termination of life is allowable for some individuals and unacceptable for others. Presumably, how such issues are decided is aided by the wishes of the parties involved *when these wishes are known*. But what should be done when, as in fetal life or in the case of the incompetent patient, the individual involved does not have the capacity to express his/her own wishes? Can third-parties reliably be allowed to make such decisions? Should assessments of the individual's quality of life impact upon the so-called "right-to-die?" And finally, if medical treatment can be refused by competent patients, what forms of medical support does this include?

In November 1988, the Missouri Supreme Court of Appeals in overturning the district court judge, found that the life of Nancy Beth Cruzan, a 30-year-old woman in a "chronic, persistent vegetative state" supported only by artificial nutrition and hydration through a gastrostomy tube, could not be terminated by means of withdrawing nutrition and hydration under the interpretation of existing statutes. It is my opinion that the appellate court, guided by the facts of the case, took the appropriate measures in declaring and applying the currently recognized statutes. Particular arguments aside, what was missing from the right-to-die argument was the existence of evidence which beyond a reasonable doubt would prove that Ms. Cruzan would have exercised that right had she been capable.[1]

Autonomy and Self-Determination

The laws of our land reflect the libertarian nature of our founding fathers. Our Constitution was drafted at a time when the propensity of Old World governments was to usurp the rights of the individual in all areas of human existence. Our Constitution, as well as our common laws, protect the right of the individual to personal freedoms, the most sacred of which is self-determination and individual autonomy over the control of one's own person. The existence of human beings as free-willed agents, capable of making moral decisions and worthy of accepting blame, is predicated upon the existence of autonomy and self-determination. These ideas are fundamental to the laws of our land and when such ideas conflict with the interests of the State, in situations where no harm may come to any other person than the one involved, the rights of the individual are assumed to prevail.

The Myth of the Right-To-Privacy

The so-called "right-to-privacy" is expressed by many authors as implicit in the language of the Constitution; however, nowhere is such a right explicitly stated and in no circumstance has it been uniformly recognized. There is not now and never has been a clear-cut right to privacy. Governments on innumerable occasions have abridged that so-called right as the situation warranted. In the defense of individual autonomy and self-determination in exercising the right to refuse life-sustaining medical treatment, the arguments relying upon the individual's right-to-privacy must be abandoned.

Informed Consent

In accordance with recognized legal and medical standards, medical procedures can be performed only when the informed consent of the party undergoing the procedure has been obtained. The ability to provide informed consent depends upon the capacity of the individual to make clear and conscious decisions, free of all forms of coercion, with a rational knowledge of the possible risks and benefits associated with the given procedure. Although many procedures are performed on behalf of a given individual by qualified professionals, if any aspect of the above requirements is not clearly observed, a medical procedure cannot *rightfully* be administered, and will always be subject to further scrutiny and justification.

Third-Party Substituted Judgment

The allowance of a third party to make medical and legal decisions affecting an incapacitated individual has long been recognized by the courts. However, by their nature, third-party substituted judgments are at best only approximations of the wishes of the affected individual. In these cases, the court is faced with testimony that is either tainted with too much or too little interest on behalf of the third party providing that testimony. On the one hand, a parent or relative may have better insight into the wishes of the affected individual concerning quality of life issues than a disinterested third party; however, the parent or relative will also be uniquely affected by the outcome of that decision, and hence has lost the necessary objectivity. On the other hand, a disinterested third party such as an *ad hoc* ethics committee may provide fair and objective testimony as to how an ordinary individual might view quality of life issues, but by their design, such committees lose all sight of the wishes of the given individual. At best, third-party substituted judgments represent approximations of the individual's true intent. Such approximations can be allowed when, if incorrect, they can be reversed with minimal adverse consequences. In the decision to discontinue life-support, the consequences are uniquely permanent and final.[2]

Quality of Life

The key issue in the right-to-die cases upon which advocates rely is the recognition that life is not an all-or-none proposition. Instead, these authors believe that there exists a spectrum of lives that are more or less living. This point of view departs sharply from most legal, religious, and ethical doctrines. Our laws assert the unalienable equality of all human life such that each individual enjoys the same right to life and liberty as another. Our theological teachings point to the sanctity of all human life whatever its form in an effort to show respect for the work of the Creator and to instill within us a sense of compassion for those who are less fortunate. Our ethicists maintain that if one accepts the statement that some lives are not worth living, then that opens the door to the extermination of mental incompetents, genetically-defective individuals, and potentially any life not deemed worthy by the State and/or its society. In essence, all *formalized* arguments would hold that quality of life issues should not form the basis for decisions to terminate life; nevertheless, as individual free-willed agents capable of making competent decisions, we all tend to believe that there are some circumstances under which we would prefer not to suffer, and hence, not to live. This duality of opinion presents a difficult dilemma to the courts when as individuals we all believe in an idea that we would prefer not to have codified by common law or any other recognized doctrine.

Refusal of Medical Treatment

The refusal of medical treatment remains the issue at hand. We recognize that the giving of informed consent relies upon the right to give informed refusal. But when refusal of medical treatment is sure to cause death of an individual, then how can this be considered anything other than a form of State-condoned suicide? Some arguments attempt to make distinctions between the provision of nutrition and hydration, as opposed to medication or the use of mechanical assistance in sustaining life. Any action undertaken on behalf of medical personnel, by definition, represents medical treatment. As recognized by common law and current medical standards, any treatment that is not expressly desired by the individual should not be forcefully administered. We are therefore left with the proposition that there are certain circumstances when individuals are within their rights as human beings and citizens to commit suicide by refusing medical treatment.

Right-To-Die

The right-to-die is nowhere stated in the Constitution nor common law, but would seem to be a necessary outgrowth of well-constructed logical arguments stemming from existing rights based upon recognized personal freedoms, individual autonomy, and the freedom to prevent unwarranted bodily invasion. What these arguments suggest is that the State's interest in preserving life, while reasonable in general, cannot be defended in the particular circumstance where the overriding rights of the individual are involved. It is upon these tenuous holdings that right-to-life and right-to-death decisions are made. Unfortunately, as in the Cruzan case, circumstances do arise wherein the expressed wishes of the individual are not known, and in such cases, it is my opinion that the right-to-life must prevail.

The Cruzan case addresses all the major issues before the court as regards autonomy and self-determination, the "right-to-privacy" argument, third-party substituted judgments, and quality of life assessments in the refusal of medical treatment. What would appear to be the crucial issue is the expressed wishes of the individual. In the Cruzan case, although certain statements were made by Ms. Cruzan in general reference to quality of life issues and although her immediate family testified as to what they believed to be her wishes, the court was left with merely hearsay evidence and the opinions of non-disinterested parties regarding an issue as important as the discontinuation of life-supportive measures which, by its nature, is uniquely permanent and final.[3]

There are innumerable reasons, including financial costs to society and emotional costs to the immediate family for allowing individuals in a chronic, persistent vegetative state to die. In cases where there is no clear evidence pointing to the fact that such a course of action is expressly desired by the affected individual, decisions regarding the termination of life cannot rightfully be made by third parties. I support the right-to-die for all individuals as a necessary outgrowth of existing rights, but only when that right is being exercised by the individual involved or when to a reasonable degree of certainty that wish is expressed by some form of written doctrine or living will. To do otherwise would be to inflict upon an individual the gravest of injustices, that of wrongful death. In reconciling the tremendous costs to society inherent to the preservation of such liberties, one must remember that the merits of a society can often be determined by the degree to which the rights of the most defenseless of its members are protected.

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2. Angell M: Prisoners of Technology: the case of Nancy Cruzan. *N Engl J Med* 1990;322:1226-1228.
3. Lo B, Rouse F, Dornbrand L: Family decision making on trial: who decides for incompetent patients? *N Engl J Med* 1990;322:1228-1232.

Editor's Note: The United States Supreme Court, in July 1990, handed down its decision in the Cruzan case. The Court agreed with the Missouri State Court of Appeals deciding that Nancy Cruzan's feeding tube could not be removed. She remains in her persistent, vegetative state in a state hospital in Mount Vernon, Missouri.

Evan K. Saunders, M.D., is a first-year resident in obstetrics & gynecology at the Michael Reese and University of Illinois Hospitals in Chicago, Illinois. He obtained his medical degree in May, 1990 at the Washington University School of Medicine in St. Louis, Missouri.

Last week, the Arthritis Foundation helped Jennifer Adams get ready for a date.
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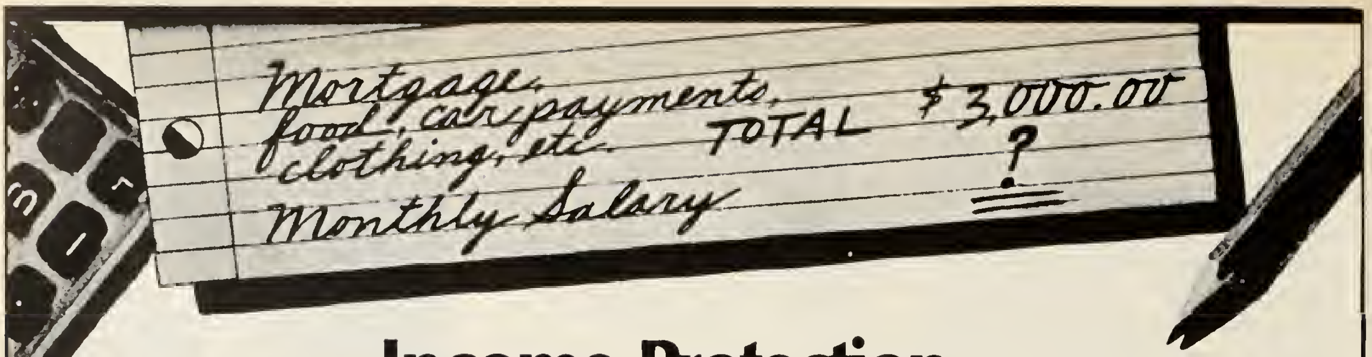

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EDITOR'S DESK

by William H. Crosby, M.D.
Guest Editor

How much ozone is created by sunlight, and what is its half life? How are the natural creation and destruction of atmospheric ozone stabilized? Who knows?

Cancer and the Ozone Hole

By this time all the world knows that the world is sheathed in a film of gas. Near the outer side of this atmosphere is a thin layer in which atoms of ozone are concentrated. Horror of horrors, that ozone is being destroyed. Only the readers of the *Joplin Sunday Globe* comic section are aware that this is the *second* time that the ozone layer has been threatened. Several months ago in the "Wizard of Id" the Little King visited his soothsayer saying, "Read me the distant future." She did: ". . . it's the twentieth century . . . Scientists make a horrific discovery! But science triumphs . . . THE INTERNAL COMBUSTION ENGINE SAVES THE DAY! The King — marvellous straight man — asks, "What was the horrific discovery?" The oracle replies, "Horse manure was destroying the ozone layer." History repeats.

Today's horrific discovery is that every November, over the South Pole, a hole appears in the ozone layer. No one knows why except the scientists who are funded to measure the hole, the media thriving on horrific discovery and the rest of us who suckle the media to get our daily shudder.

Why should we shudder for the ozone hole? Because, the story goes, the earth's ozone layer protects us from cancer. The ultra-violet light in sunlight is carcinogenic, causes skin cancers. Ozone blocks out the UV, not all but some. And that difference can increase the incidence of carcinoma and melanoma. And so the wise men cry: Plug that hole! At all costs! UV causes cancer! The sky is falling!

All costs? The cure prescribed by our space-cadet scientists is get rid of Chloroflurocarbon. CFC is a family of gaseous compounds easily compressed to liquid. Release the pressure, and they blow away. They used to be the propellants in your under-arm cosmetics. They still are the refrigerants in your air conditioner and refrigerator. They can destroy ozone. In a catalytic reaction they knock off one oxygen atom. CFC was encountered in the upper atmosphere several years ago — at about the same time that the ozone hole was discovered. The hole may have been there forever, who knows? But when CFC was discovered, and knowing its baleful effect on ozone, the Technical Imperative was unleashed. Technical Imperative? If a thing *can* be done it *must* be done. What an easy step: CFC *can* destroy ozone; therefore, it *must* have etched out the ozone hole. That's the incriminating evidence. Down with CFC! Never mind it will cost billions to revise the world's refrigerant technology but, bewitched by our own soothsayers, the governments of the world are panting to spend their dough. (Our dough?)

Now, ozone is a form of oxygen, a triatomic form: O_3. The oxygen we breath is O_2. In the upper atmosphere the sun's UV acts upon O_2 to form O_3. It is not a stable form like O_2. Natural chloride in the air can reduce it, like the chloride in CFC. Natural chloride in the air? Yes, the chloride, for ex-

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Editor's Desk

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ample, from sea water blown off the cresting waves, dries, and some of the NaCl, ionized, wafts into the upper atmosphere, into the ozone layer. How much? Who knows?

How much ozone is created by sunlight, and what is its half life? How are the natural creation and destruction of atmospheric ozone stabilized? Who knows?

At the South Pole does the turnover of ozone differ from the turnover at the equator? The earth is a huge magnet, and its electromagnetic force thrusts out at the magnetic poles. Above the poles the electromagnetic plasma flowing from the sun meets, in turbulence, with the earth's electromagnetism. The Aurora Borealis, the Northern Lights, is one spectacular evidence of that turbulence. What effect have these phenomena on the turnover of ozone, the amount created and the speed of destruction? Who knows?

If the ozone hole at the South Pole can cause skin cancers in Missouri, should we not be able to perceive the carcinogenic increase in UV in parts remote from the South Pole? It has been looked for. It has diminished! Diminished? Yes, the CFC that knocks off the South Polar ozone has not resulted in more carcinogenesis in Missouri sunlight, in anywhere, it seems.

Yet, the attack rate of skin cancer has increased. However, the epidemic of skin cancers began long before underarm sprays exhaled their poisons southward. The incidence of melanoma in Connecticut, for example, in the late 1930s was 1 per 100,000; in the early 1960s it was 3.5 per 100,000. A 350% increase. In the Pacific Northwest in the 1960s, the rate was 4.5, in the 1970s it was 10.5, and in the 1980s it was 18.5 per 100,000. The rising incidence of skin cancers, both squamous cell and melanoma is attributable to "increased voluntary exposure to the sun over an extended period." The search for the perfect tan yields a self-inflicted wound. Those who put themselves at risk do so knowing the risk, accept it willingly, and reinforce it with the UV in commercial tanning parlors. Yet some of them parade beneath the rubric: **Save the Ozone Layer.** They belong in school with the cigarette smokers who would prevent lung cancers by ending smog. (The cough and tears in smog are caused by ozone.)

Pay attention! Cry "CANCER!" if you would catch the attention of the media, the Congress, the FDA, the EPA. It doesn't matter how weak, sleazy, even fraudulent your claim, you will be heard. Here is one specious clamor: Sleeping under electric blankets could cause cancer. Proof? No proof, but it might. Why take a chance? This sort of argument has been aimed at Alar (makes the skin tough), cyclamate and saccharine (sweeteners), DDT (the best insecticide), agent orange (defoliant). Benzine, a harmless carbon chain, is often confused with benzene, a carbon ring and a dreadful carcinogen. The confused media experts and bureaucrats are undismayed. Well, they sound the same. Why take a chance? On the other hand known carcinogens are winked at by the Congress and bureaucrats: tobacco, afflatoxin in peanuts, tobacco, alcohol-to-cirrhosis-to-hepatoma, tobacco, lindane (domestic insecticide), tobacco. Tobacco, the worst of all, is subsidized by Congress. But Congress *does* strive to defend us, if not against lung cancer, certainly against obscenity.

Cry CANCER! That's how the atmosphere's space cadets would focus the world's attention on their horrendous hole.

The world will not end in fire or ice, after all. It will be horse manure. ■

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PRESIDENT'S PAGE

by Gary A. Dyer, M.D.
MSMA President

We must answer the question, "What is MSMA doing for me?" with a question — "What are you doing for MSMA?"

MSMA is YOU!

As a high school student I remember a Yogi Bear television cartoon in which Yogi made a statement that went something like this: "The question is not how but who, and the who is you Boo Boo!" Frequently I am asked by physician members, "What is MSMA doing for me?" Each time I hear that question I think of Yogi, and after 15 years of MSMA involvement my automatic response is, "Doctor, MSMA is You! What are you doing for MSMA?"

Missouri physician members in large number seem to believe that once the dues are paid, involvement in, and responsibility to, MSMA ends. Not so, at least in the last 15 years. I believe that it has been true all along, but certainly now more than ever, MSMA needs YOUR DUES AND YOU!

Each member physician is representing MSMA in at least three arenas:

1) **organized medicine at the component society or section level**
2) **grassroots political action**
3) **community involvement.**

In the component society or section, active members, among other things, study the issues, contact inactive members one-on-one, disseminate MSMA information, support auxilians, talk to their councilors, and serve as delegates and key contacts. Grassroots political action involves supporting candidates, working in campaigns, knowing key contacts and the issues, contacting legislators, supporting MMPAC, and certainly voting.

Community involvement includes medical and/or non-medical activities of the physician's choice. Charity care, health fairs, and screening clinics are examples of medical activities.

Non-medical choices for involvement are even greater. Examples include scouting, science fair judging, playing in the symphony, working for the historical society, or serving on the school board. Physicians and auxilians can be very creative in this area. The important thing is to be visible in the community.

I do not understand the concept of local component society membership only. It does not compute in my book. MSMA is You in the component society, as well as at the state level. ■

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AUXILIARY MESSAGE

by Elizabeth Huffaker
MSMAA Membership Chairman

> *Excuses are just that no matter how politely they are phrased. But there is no valid excuse for not belonging to the Medical Auxiliary!*

Phantoms of the Medical Auxiliary

One of life's little mysteries to me has always been why physician spouses do not belong to the medical Auxiliary. Further, the reason physicians seem unconcerned plagues me. Operating under the naive notion that spouses naturally want to aid their partners in their career choice, I have always considered it a privilege to serve the medical Auxiliary. In this rapidly changing and turbulent times of medicine today, I find the Auxiliary to be an excellent means of keeping up with the changes that affect my husband's career. Apparently, fewer and fewer spouses feel this way, for membership in the past 10 years has steadily declined. Some often-cited reasons for not belonging to the Auxiliary as reported by the AMA Auxiliary, include:

1. "My husband is not interested in my being a member." This excuse really bothers me. Why would he NOT be interested? Are not most spouses very well educated and capable of engaging in their own thought processes? Can we not read and interpret what is happening around us? Are we as spouses not to be concerned about the myriad changes affecting medical practices today? In my marriage anything that affects my husband also affects the family of which I am a part. We spouses probably interact more with the community than the physician spouse and as such, can do much to foster a positive image of the physician. We become their goodwill ambassadors.

2. "I have too many other meetings to attend." I do not deny that great demands are made upon our time. I feel, though, that we can always make time for what we *want* to do. We attend PTA meetings, Junior League meetings, church meetings, etc. The list is endless. Are not our spouses' concerns and our livelihood, just as important? If you pay your dues and join, even if you miss a meeting or two, you still are on the mailing list and receive the information from your medical Auxiliary that will keep you informed on what is happening. This enables you to pick and choose and budget your time more wisely.

3. "I'm just not interested in the current programs and projects." I can understand this complaint, for not everyone's interests are the same. Nor would we want them to be. Think how boring that would be. Auxiliary programs are constantly changing, involving health concerns, community problems, legislative issues, etc. Instead of sitting back and complaining, why not present your ideas to the Auxiliary? You're probably just the type of innovative person we need. The Auxiliary is many different things to many different people. Our one common denominator is that we care.

4. "I work." It is pretty well-documented now that the duel-career family is more the norm than the exception. You are still much needed even if you can't be super-active! You bring a different perspective to the organization along with skills often sorely needed. Most Auxiliaries vary the times of their meetings and social events to accommodate the working spouse. In addition, you still receive the

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Auxiliary Message

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county, state and national publications to keep you informed on medical Auxiliary activities. What makes the Auxiliary so unique is that we each come with different backgrounds, training, and experiences and the sharing of these makes for a powerful force to be reckoned with everywhere.

5. "I belong to the hospital auxiliary — isn't that the same?" Not necessarily! We all know that hospital auxiliaries are concerned with the patients in a particular hospital and the problems and the needs of that hospital. The medical auxiliary focuses on the community from which the patient came, with conditions contributing to poor health, and in helping to provide solutions to health problems. We are concerned with the whole, not just one small segment.

6. "I have small children at home and no sitter." Never let this excuse keep you away from a meeting. I have seen many a small future auxilian at our meetings. You need to get out of the house and we definitely want to meet you. As I stated before, many activities are planned in the evenings and weekends when sitters are more plentiful than during the day. Even if you can't come to everything, by belonging you receive the current literature and can stay abreast of what is happening around you. When my children were very small was when I most craved the sound of an adult voice and a little mental challenge. Don't let small children deter you from joining the Auxiliary.

7. "The group is too large — I don't know the other members." Surprisingly, we're a very nonthreatening group and welcome new members. You have something in common with everyone right away, because we are all physician spouses. You meet spouses from all over the city and from all specialties. The quickest and easiest way to meet people is to engage in one of the projects of the organization. Believe me, you'll be enthusiastically welcomed on any committee.

Excuses are just that no matter how politely they are phrased. As you can see from the above responses, there's an excuse for everyone to avoid joining the medical Auxiliary. If you stop to analyze the excuse, it falls flat. There is no valid excuse for not belonging to the medical Auxiliary! Medicine has been good to us and we have a responsibility to promote the welfare of medicine.

Physicians, I implore you. One of the best presents you can give to your spouse is a membership in the medical Auxiliary. You receive dual benefits. Your spouse becomes educated to the many problems facing you on a daily basis and is a better "help mate." The spouse has an opportunity to use the special skills that she has and to develop in her own personal growth. (Don't forget — we are not just a women's organization. We need the male spouses too!) Physician, if your spouse does not belong, please contact your county Auxiliary. If you don't know how to do this, you may also contact me, and I will be more than happy to take care of any problem. Just fill out the form below and mail it to me: Mrs. Elizabeth Huffaker, 134 Pinehurst Estate Drive, St. Louis, MO 63141.

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Dear Dr. Woerth:

We have been using the ICD-9-CM for coding our patient's diagnoses as required by Medicare. However, there is confusion in our office as to from which Volume, 1 or 2, we should code. Could you help us?

H.B.

Dear H.B.:

Yours is not the only office confused about use of the ICD-9-CM, Volume 1 and 2. Fortunately, in Volume 2, the authors have provided clear instructions as to how to use the volume. Note on page iii, paragraph three of Volume 2 (as issued by the U.S. Department of Health and Human Services) the first sentence says "Never code directly from the Alphabetical Index." Volume 2 is the Alphabetical Index. So, it is inappropriate to code from Volume 2. I have found that on the average, those who do attempt to code from Volume 2 have about a 50% error rate for their diagnostic coding. That's why the authors of ICD-9-CM want you to treat the diagnostic code suggested in Volume 2 as a tentative code that must be looked up in Volume 1.

In Volume 1, the coder is given additional information important to accurate coding. This information is found in the introduction of the book under "Conventions Used in the Tabular List." The inclusion and exclusion notes found only in Volume 1 are especially important to correct code selection. Codes written in italics are never to be coded as the #1 diagnosis on a claim. There is always additional information with italicized codes about underlying disease codes. One of these needs to be listed as the #1 diagnosis.

The ICD-9-CM books were never designed for self-instructional use. To correctly use the books, one needs to attend basic ICD-9-CM coding courses. Because of the vast amount of information that must be learned to accurately code, I recommend attending at least two basic coding courses. It's best if these are attended about six to nine months apart. After that, a medical staff should attend yearly coding/Medicare update courses. I realize the courses can be expensive, but I have consistently found that those well trained in coding receive better reimbursements on their claims. Thus the cost of attending coding courses is reaped many times over by increased revenues.

Dear Dr. Woerth:

I noticed in one of your recent columns you recommended updating the CPT book annual. How often should we update the ICD-9-CM?

C.S.

Dear C.S.:

The ICD-9-CM, like the CPT, is updated annually. It is not necessary, however, to purchase a new set of ICD-9-CM books annually as the updates are issued in the form of addendum on October 1 of each year. If you have purchased the ICD-9-CM, Third Edition, Volume 1 and 2 from the U.S. Department of Health and Human Services, they will automatically send you the addendum at no extra cost through 1991. In 1992, ICD-10-CM is to be published and is supposed to be used. It is rumored that implementation of the ICD-10-CM codes may be delayed. The U.S. Department of Health and Human Services does not sell the addendum separately. If you have purchased your ICD-9-CM from a private company, like St. Anthony's, you can purchase the annual addendum from them. It will cost approximately $59. You can also purchase the addendum for approximately $10 from Conomikes and Associates at 6033 W. Century Blvd., Los Angeles, CA 90045. ■

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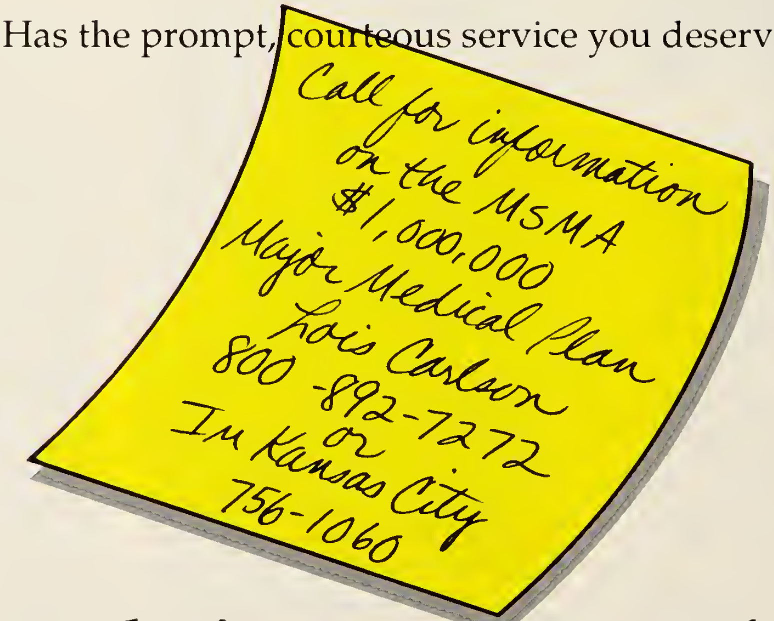
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Immunization

Scheduled immunization is one of the most important ways that individuals can protect themselves and their children from preventable communicable disease. Through diligent public health efforts, diseases that were once considered common have been mostly eradicated, sparing millions from not only the disease themselves, but their potentially devastating after-effects.

Side Effects

Much popular press has been devoted to extremely rare, yet tragic reactions following vaccination that have resulted in severe illness or even death. When scheduled immunization is carried out under recognized guidelines such as those set forth by the U.S. Centers for Disease Control or the American Academy of Pediatrics, the risk of severe reaction following vaccination is astronomically low. For example, despite the widespread public controversy regarding oral polio vaccine, severe after-effects are only seen in **one of nine million** infants that receive oral polio vaccine.

Immunization of children protects future generations, as well. Since the introduction of rubella vaccine, it is estimated that about 20,000 unborn children each year have been spared the disastrous consequences of maternal rubella infection. The risks caused by the diseases themselves and their equally tragic after-effects far outweigh the risks of vaccine administration.

Mild side effects, such as redness and swelling at the injection site, muscle and joint aches, or a low grade (under 100.5°F) fever, however, are not uncommon. These symptoms can be safely relieved with any over-the-counter fever reliever.

Not Just "Kid Stuff"

Although public health officials have recognized the need for scheduled immunization in children, they are just now realizing the importance of **adult** immunization in preventing communicable disease among certain populations. Infection rates in seven diseases--influenza, pneumococcal pneumonia, rubella, measles, tetanus, and diphtheria--can be significantly reduced by targeting adult populations for vaccination.

For instance, although we often think of influenza as a "minor" disease, it has claimed the lives of **over a half million** Americans over the last twenty years, and accounts for **over fifteen million** lost work days annually. Other facts about the "big seven" include:

– Pneumococcal pneumonia causes 25,000-30,000 deaths annually in the U.S.

– Despite the availability of tetanus-diphtheria vaccine, 25-300 cases of tetanus and 200-300 cases of diphtheria are reported each year.

– 200,000 new cases of hepatitis B are reported annually in the U.S.

– Although birth defects from maternal measles and rubella infections in pregnant women are totally preventable, approximately five percent of U.S. women of childbearing age are susceptible to these diseases.

Adult Populations Targeted

Influenza vaccine

*Persons over age 65

*Persons with chronic diseases such as diabetes, anemia, leukemia, kidney disease, lung disease, or heart disease, or those with a lowered immunity state, such as chemotherapy patients

*Health care personnel in contact with high-risk patients and hospitalized patients

Flu shots must be obtained annually (since each year, different strains of the virus are likely to cause disease) in October or November — *before* the flu season starts.

Pneumococcal pneumonia vaccine

*Persons over age 65

*Persons with chronic illnesses, heart disease, lung disease, kidney disease, or a lowered immunity state

*Persons whose spleens have been removed

Pneumococcal pneumonia vaccine is 100% reimbursable under Medicare.

Hepatitis B vaccine

*All health care workers

*Residents and staff of institutions for the mentally retarded

*Hemodialysis patients

*Homosexual men and heterosexual men and women with multiple sex partners who see a doctor for treatment of sexually transmitted diseases

*Intravenous drug users

*Hemophiliacs and others who receive blood products

*Alaskan natives, native Pacific islanders, or immigrants from eastern Asia and sub-Saharan Africa

*Household and sexual contacts of known hepatitis B carriers

Tetanus-Diphtheria vaccine (Td)

*Any individual with no history or an unknown history of Td vaccination.

In addition, anyone who has not received a Td booster in ten years should do so every ten years throughout life. Individuals who sustain a bite, deep scratch, cut, or puncture, and have not received a booster in five years should receive a tetanus booster.

Measles vaccine

*Adults born after 1956 who have not had measles or are uncertain about having had measles. This is especially true for women of childbearing age.

In addition, certain groups of immunized adults need to be revaccinated or tested for measles immunity. **Adults vaccinated before 1968 may have received a type of vaccine that has now been found to be inactive. Adults who were vaccinated before the age of fifteen months need to be revaccinated,** as recent studies have shown that complete immunity from measles vaccine does not take place until age 12-15 months.

Rubella vaccine

*Individuals with no exposure to rubella, uncertain history of exposure, or uncertain vaccination history — **especially women of childbearing age.**

Women of childbearing age who receive measles-rubella (MR) vaccine should be aware of the potential risk of infecting unborn children if presently pregnant, or if pregnancy occurs within two months of vaccination. These women should have a pregnancy test prior to receiving MR vaccine, and practice a medically sound program of birth control for at least two months following vaccination.

Finally, all adults should take great care to keep their personal immunization records in a safe place — not just their children's records. These records are the key in combating preventable infectious disease, and could play a major role in eradication.

Immunization Schedule for Children

Age	Vaccine(s) Recommended
2 months	Diphtheria-Tetanus-Pertussis (DTP), Oral Polio Vaccine (OPV)
4 months	DTP, OPV
6 months	DTP
15 months	Measles-Mumps-Rubella (MMR)
18 months	DTP, OPV
2 years	*Haemophilus influenza* (adult preparation)
4 - 6 years	DTP, OPV
14 - 16 years	Tetanus-Diphtheria (adult preparation) (Repeat every 10 years throughout life)

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Efforts in Primary-Care Practice to Control Tobacco Use

Kathleen Anger, Ph.D., James R. Davis, M.S., Ross C. Brownson, Ph.D., Sherri G. Simms, M.S.N., R.N., and **Thomas G. Kern, M.S.**
Columbia, Missouri

In this article, the authors findings lead them to conclude that because of the devastating effects of smoking on health, the public could experience widespread health benefits if primary care physicians became more active in encouraging patients to stop smoking.

Cigarette smoking is the largest preventable cause of disease and premature death in the United States.[1] It is estimated that smoking accounts for 87% of lung cancer mortality, 82% of chronic lung disease mortality, 40% of heart disease mortality (under age 65), 33% of cancer mortality, 21% of total heart disease mortality, 18% of stroke mortality, and 10% of infant mortality.[2] Smoking-attributable deaths total nearly 400,000 in the United States each year,[1] and more than 7,000 in Missouri each year.[3]

It has been shown that primary-care health professionals can persuade their patients to stop smoking.[4] Even a few minutes of counseling supplemented by a brochure, can have a substantial effect on stopping smoking.[5,6] Success can be increased by use of a team that includes physicians and other health professionals, multiple intervention modalities, individualized advice, and advice on multiple occasions.[4] Despite the potential to prevent and control this major contributor to chronic disease and premature death, studies have indicated that primary-care health professionals are relatively inactive in tobacco-control.[7]

To assess the tobacco control and cancer control activities in Missouri, the Missouri Department of Health conducted a series of studies of various health-care providers. One study in this series found that public health administrators and nurses reported relatively low levels of tobacco-control activity.[8] In another study, primary-care physicians reported low to medium levels of tobacco-control activity.[9] We report the results of a telephone survey of primary-care staff (i.e., nurses, medical assistants, etc.) who were interviewed about tobacco-control activities in their offices.

Methods

The survey was conducted from December 1987 to November 1988. We used a random sample of 72 active medical practices drawn from a list of 1628 family practice and general practice physicians compiled by the State Center for Health Statistics, Missouri Department of Health. Seventy-two percent of the practices in the sample were private practices with one or two physicians. Approximately 12% were private practices with three or more physicians, 8% were hospital outreach clinics, and 6% were other types of practices, including hospital-based or medical-school-associated. Included in the sample were the practices of 28 M.D.s in family practice, six M.D.s in general practice, and 38 D.O.s in general practice. When possible, we interviewed the "primary nurse" at each practice or the nurse who had been with the doctor the longest. If a nurse was not available, another staff member, such as a medical assistant, was interviewed. In 42 cases, the person inter-

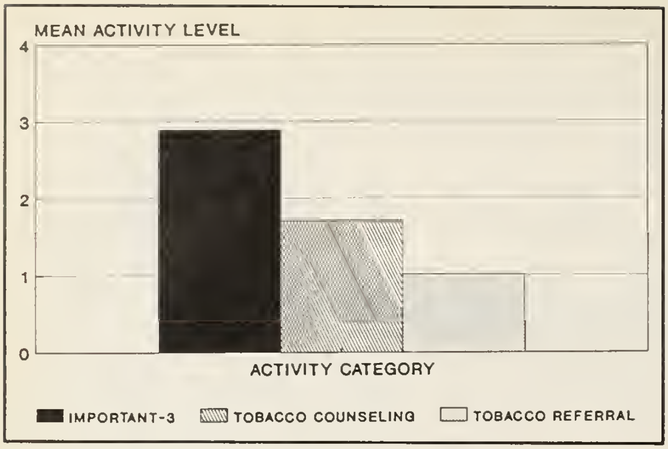

Fig. 1. Comparison of mean tobacco-cessation counseling and referral activity levels with the mean activity level in the three health-care services considered most important by individual primary-care staff members.

viewed was a nurse, and in 16 cases, the person was a medical assistant or technician. In three cases, the physician was interviewed. The other 11 interviews were obtained from office staff members or assistants who did not have formal medical training.

The questionnaire consisted of 13 questions, many with subparts. It included questions on the respondent, the type of primary-care setting, the type of health-care services offered, the types of educational materials offered to patients, and the respondent's beliefs about the causes of cancer.

One question asked the respondent to name the three most important health-care services provided by his or her office. The respondent was then asked to rank the practice's participation in each of the three services on a five-point scale, ranging from "none" to "very high." On the same scale, the respondent then was asked to rank the practice's activity level in each of four additional areas: dietary education or counseling; tobacco-cessation counseling and education; referrals to outside smoking-cessation programs; and cancer screening.

In scoring the activity-level questions, answers were assigned scores as follows: 0 for "none," 1 for "low," 2 for "medium," 3 for "high," and 4 for "very high."

Results

When asked to name the three most important health-care services provided by their office, no respondents mentioned tobacco-control activities. Five categories of health care were mentioned by more than 10 respondents. Those five categories are as follows (percent of respondents who mentioned each category is given in parentheses): hypertension screening and management (56%); physical exams (53%); diabetes screening and management (36%); immunization (24%); and cold-symptom management (22%). Thirty-six additional categories of health-care services were each mentioned by one to eight percent of the respondents.

To assess the level of tobacco-control activity relative to other health-care activities, mean activity levels were calculated for tobacco-cessation counseling and education and for referrals to outside smoking-cessation programs. These mean tobacco-control activity levels are compared in Fig 1 to the mean activity of the three most important services identified by each respondent. That level (called mean Important-3 Score) was determined by first calculating for each respondent the mean activity level of the three health-care services given by that individual. The mean (across individuals) of the Important-3 Scores was then calculated.

Figure 1 shows that the mean tobacco-control activity levels were lower than that of the mean Important-3 level. The mean Important-3 activity score was near the level labled "high" at 2.89, whereas that of tobacco counseling was between "low" and"medium" at 1.71, and referrals to outside smoking-cessation programs was at the "low" level at 1.01.

Staff of physicians with the M.D. degree did not differ from those with the D.O. degree in referrals to outside smoking-cessation programs. However, staff did report a higher activity level in tobacco counseling for M.D.s (with a mean of 1.94) than for D.O.s (with a mean of 1.49). This difference in tobacco-counseling activity level was significant ($t= 2.22$, $p < 0.05$).

Both of the two tobacco-cessation activity levels were lower than every other activity level measured in this study. The other activity levels included the 41 categories of the Important-3 services mentioned by the respondents, the general categories of dietary counseling and cancer screening, and nine specific cancer-screening services (e.g., skin, oral, breast, etc.).

Discussion

The levels of tobacco-control activity reported by staff in primary-care settings agree with those reported by physicians in the same settings. Brownson et al[9] found that physicians rated their tobacco-cessation counseling programs as medium (2.1) and their referrals to outside cessation programs as low (0.9). The comparable levels indicated in the present study were 1.7 and 1.0. In the public health setting, the level of cessation counseling was somewhat lower (1.5), and the level of referral to outside smoking-cessation programs was similar (0.9).[8] These studies also agree with previous studies in which data were collected from patients rather than health-care professionals.[7,10]

Because of the devastating effects of smoking on health, and because physicians have contact with the majority of all smokers each year,[11] the public could experience widespread health benefits if primary-care physicians and their staffs became more active in encouraging patients to stop smoking.

Conclusion

Primary health-care professionals in Missouri are only moderately active in controlling tobacco use by their patients. Yet, an increase in tobacco-control activities by health-care professionals holds great potential for large decreases in morbidity and mortality. We encourage health professionals in primary-care settings to use their own professional guidance or referral to outside smoking-cessation clinics to persuade patients to stop smoking. Physicians should also use available counseling guides, motivational materials for patients, and patient-tracking and follow-up systems. (See accompanying list.)

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The Authors

KATHLEEN ANGER, PH.D.
JAMES R. DAVIS, M.S.
ROSS C. BROWNSON, PH.D.
SHERRI G. SIMMS, M.S.N., R.N.
THOMAS G. KERN, M.S.

Dr. Anger, Mr. Davis and Ms. Simms are all affiliated with the Bureau of Smoking, Tobacco, and Cancer with the Missouri Department of Health, Columbia, Missouri. Mr. Davis is Chief of the Bureau. Dr. Brownson is the Director of the Division of Chronic Disease Prevention and Health Promotion, Missouri Department of Health, Columbia, Missouri. Mr. Kern is affiliated with the Psychology Department at the University of Missouri-Columbia.

Reprints

Kathleen Anger, Ph.D.
Bureau of Smoking, Tobacco, and Cancer
Missouri Department of Health
201 Business Loop 70 West
Columbia, Missouri 65203

Resources

Many resources are readily available to the primary-care practitioner to help him or her help patients stop smoking. Some of these are listed below.

Guides to Education, Counseling, and Behavior Modification

* *How to Help Your Patients Stop Smoking: A National Cancer Institute Manual for Physicians.* Includes appendices listing sources of additional materials. NIH Publication 89-3064 available from: National Cancer Institute, **1-800-4-CANCER.**

* *Clinical Opportunities for Smoking Intervention: A Guide for the Busy Physician.* Shows how to take advantage of opportunities during normal patient encounters. Available from: Superintendent of Documents, U.S. Government Printing Office, **(202) 783-3238.**

* *The Physicians Guide: How to Help Your Hypertensive Patients Stop Smoking.* Available from: National Heart, Lung, and Blood Institute, **(301) 496-4236.**

Kits that Include Motivational Materials for Patients:

(Some of the following also include tracking systems for patient follow-up.)

* *AAFP Stop Smoking Kit.* Available from: American Academy of Family Physicians, **1-800-274-2237.**

* *Tobacco-Free Young America Kit.* Available from: American Cancer Society, **1-800-ACS-2345.**

* *A Healthy Beginning Counseling Kit.* Available from: American Lung Association, **(212) 315-8700.**

* *Quit For Good Kit.* Available from: National Cancer Institute, **1-800-4-CANCER.**

Sources of Information on Smoking-Cessation Programs for Patient Referral

* The American Cancer Society and the American Lung Association conduct smoking-cessation clinics at various times and locations throughout the state. Schedules of upcoming ACS "Fresh Start" clinics and ALA "Freedom from Smoking" or "EASE" clinics in your area can be obtained by calling:

Your local branch of the American Cancer Society or
The American Lung Association of Eastern Missouri, **(314) 645-5505,** or
The American Lung Association of Western Missouri, **(816) 842-5242.** ■

Current Management of Primary Breast Cancer

Part I:
Screening, Diagnosis, Staging and Local Treatment of Stage I and II Disease

Marvin J. Lopez, M.D., F.A.C.S., and **Dorothy P. Andriole, M.D.**
St. Louis, Missouri

In the first of two parts, the authors present an overview of screening, staging, diagnosis, and treatment of primary breast cancer. In next month's issue, the aspects of adjuvant therapy, treatment of locally advanced breast cancer, and management of carcinoma in situ will be presented.

The American Cancer Society estimates that approximately 150,000 new cases of carcinoma of the breast will be diagnosed in 1990. This malignancy accounts for approximately 26% of all cancers in women and remains the second leading cause of female cancer deaths in the United States, with approximately 44,000 fatalities per year. Furthermore, it has been estimated that about 10% of all women in this country will eventually develop breast cancer.[1]

The treatment of carcinoma of the breast continues to evolve. Technological refinements in mammographic equipment, coupled with increasing expertise among radiologists, have resulted in the improved predictive value of mammography. There is evidence of an increasing incidence of stage I and in situ carcinomas during the 1980s. The National Cancer Institute believes this is due to earlier diagnosis through screening.[2,3]

Comparisons of results of total mastectomy and axillary dissection with breast conservation treatment show that, for selected women with breast carcinoma, the five- to 10-year survival rates will be similar. Adjuvant therapy for breast carcinoma is well established for certain groups of breast cancer patients, and indications for adjuvant therapy continue to change as the results of prospective trials identify patients at high risk of relapse. Remarkable advances have occurred recently using preoperative (neoadjuvant) chemotherapy in locally advanced carcinoma of the breast — a disease once considered uniformly and rapidly fatal.

Our purpose in this review is to present an update of the current management of primary breast carcinoma, focusing on the issues we have identified here.

Breast Cancer Screening

Despite current concepts suggesting that human mammary cancer is a systemic disease at its inception, detection at an early stage has been associated with an excellent prognosis. Evidence has existed for nearly 30 years that screening asymptomatic women for breast cancer can detect this malignancy at earlier stages.[4] In addition, randomized trials have clearly demonstrated the possibility of reducing breast cancer mortality via mass screening, and have also refuted critics who charged there were lead time, length, and selection bi-

Table 1
Nodal Status, 10-Year Survival, and Breast Cancer Lethality Rates
Influence of Breast Cancer Palpability in 136 Screenees

	%Negative Nodes	%Positive Nodes	%10-Year Survival Rates	%Lethality
Non-palpable*	84% (64/76)	16% (12/76)	85% (65/76)	2.6% (2/76)
				>(P=.00001)
Palpable**	63% (38/60)	37% (22/60)	61% (37/60)	30.0% (18/60)
TOTALS	75% (102/136)	25% (34/136)	75% (102/136)	14.7% (20/136)

*Mammographically-detected
**With or Without Mammographic Abnormalities

From: Lopez MJ and Blackwell CW.
Breast cancer detected by screening: The importance of long-term follow-up. *Surgery* 1989;106:590-595.
Reproduced by permission.

ases. The cost-effectiveness of breast cancer screening remains controversial, but most investigators agree that reducing breast cancer – related mortality justifies the cost. Thus, screening has become the subject of public support and governmental policy in some European countries and is firmly established in the United States.

The first prospective, randomized, controlled trial of breast cancer screening was the Health Insurance Plan of Greater New York (HIP) Study. This trial was initiated in 1963 and enrolled more than 60,000 women, who were randomized either to receive four annual screening physical examinations and mammograms or to follow their usual pattern of medical care. In 1982, Shapiro and associates reported a 30% reduction in breast cancer mortality for the screened group when compared with the control group. A final report on this trial after 18 years of follow-up has demonstrated continued benefit for the screened group.[5]

In 1974, the American Cancer Society (ACS) and the National Cancer Institute (NCI) jointly sponsored a massive screening program, the Breast Cancer Detection Demonstration Project (BCDDP), the primary purpose of which was to promote early breast cancer detection practices. By 1976, more than 280,000 women had enrolled in the program and were screened annually for five years. In a summary report, Seidman and associates published survival data on 4,240 women whose carcinomas were detected by the project.[6] The relative 5-, 8-, and 10- year survival rates were 88%, 83%, and 79%, respectively, which compares favorably with survival rates in non-screened breast cancer patients. The Missouri BCDDP, based at the Cancer Research Center in Columbia, Mo., detected 136 carcinomas among 10,187 asymptomatic participants. A 1986 report documented that the 5-year survival rate for women whose carcinomas were detected by mammography alone was 95% (72/76).[7] A recent 10- to 15-year follow-up report on this group of 136 breast cancer patients has shown continued high survival rates.[8] From these data, it has been concluded that long-term survival in breast cancer is, in large measure, dependent on the ability to detect malignant lesions before they become palpable. As shown in Table 1, the influence of breast cancer palpability on the lethality rates at 10 years is remarkable.

The Swedish Study began in 1977 and randomized 134,867 women to receive a single view mammogram, every 24 months for women aged 40-49 and every 33 months for women aged 50-74. Tabar and Dean reported that by the end of 1984, the screened group experienced a 25% reduction in the absolute rates of stage II carcinomas and a 31% reduction in breast cancer-related mortality.[9] Preliminary reports from other randomized studies have confirmed the initial findings of previous randomized trials.[8] At present, there is clear evidence that screening asymptomatic women can significantly reduce breast cancer mortality. On June 27, 1989, the American College of Radiology released the following consensus statement on the use of mammography in breast cancer screening:

"A number of medical organizations have issued guidelines for the detection of breast cancer in asymptomatic women. While there has been general agreement, because the individual statements were developed at different times and with different perspectives, they vary in detail. This is confusing to the public and to many physicians. The undersigned organizations are in agreement concerning the components and frequency of a breast screening program; differences in wording or presentation in previous official statements should not be construed as departing from the following consensus:

1. Clinical examinations of the breasts and mammography are the basic detection methods. The examinations are complementary, and both are necessary to achieve maximum detection rates.

2. It is recommended that the screening process begin by age 40 and consist of annual clinical examination with screening mammography performed at 1 to 2 year intervals.

3. Beginning at age 50, both clinical examination and mammography should be performed on an annual basis.

4. The recommendations apply only to women without signs or symptoms of breast cancer; the frequency and type of examination will vary for the individual with symptoms and should be determined by the responsible physician.

The coordinated and unstinted efforts of medical groups, government, and third-party carriers will be necessary 1) to provide adequate screening opportunities, 2) to educate women concerning the benefits of breast cancer screening, 3) to reduce the cost of mammography, and 4) to continue to stimulate, conduct, and monitor research on efficacy in younger women. The cost of making such a program available to all American women is substantial. However, available data demonstrate that the systematic use of mammography and clinical examination can reduce mortality for cancer of the breast in women over 40 years of age."

The consensus statement was endorsed by the following organizations: American Academy of Family Physicians; American Association of Women Radiologists; American Cancer Society; American College of Radiology; American Medical Association; American Osteopathic College of Radiology; American Society for Therapeutic Radiology and Oncology; American Society of Internal Medicine; College of American Pathologists; National Cancer Institute; and National Medical Association.

Breast Cancer Staging

Accurate assessment of treatment results for breast carcinoma requires consistent and reliable use of a clinical staging system. The TNM definitions and stage groupings have become the standard staging nomenclature. In 1988, the American Joint Committee on Cancer (AJCC) and the International Union Against Cancer (UICC) agreed on a uniform staging system for carcinoma of the breast (Table 2). This system applied to infiltrating and in situ carcinoma. Because of their agreement on a unified staging system, changes have been made from previous editions of the AJCC Manual. These are as follows:

1. The surgical evaluative stage has been eliminated.
2. Ipsilateral supraclavicular lymph node metastasis, which was classified as juxta-regional (N3) before, is now classified as distant (M1) disease.
3. Carcinoma in situ is considered stage 0 (TIS, N0, M0).
4. Pathologic staging now requires only the lowest level of axillary lymph nodes resected for staging. In previous editions, pathologic staging required all three levels of axillary lymph nodes.
5. Fixation of the tumor to the pectoral fascia is not recorded for staging purposes.
6. Inflammatory carcinoma is now classified as T4d (stage IIIB).
7. T3, N0, M0 previously classified as stage IIIA is now classified as stage IIB.

In addition to accurate clinical and pathological staging, other tumor factors affecting prognosis and subsequent treatment must be carefully recorded: differentiation, nuclear grade, multicentricity, extent of intraductal component, margins of resection, hormone receptors, and, if available, nuclear DNA content, ploidy, HER-2/neu oncogene and cathepsin D.

Diagnosis

The initial evaluation of an adult woman with a palpable breast mass includes a thorough history and physical examination, bilateral mammograms, and fine needle aspiration. Breast masses in children and young women under age 30 are almost always benign, and, with few exceptions, mammography is generally not recommended. Needle aspiration may be both diagnostic and therapeutic. If the mass is a simple cyst, clear or green-tinged fluid is aspirated, and the mass is rendered unpalpable. If aspiration does not yield free fluid, needle aspiration biopsy of the solid mass may provide diagnostic information. Because fine needle aspiration biopsy may give rare false cytologic findings, most physicians in this country do not undertake definitive treatment of breast carcinoma on the basis of a positive cytologic diagnosis. However, a positive cytologic diagnosis provides useful information for directing patient discussions and planning further diagnostic approaches. It is important to note that benign

Table 2
Staging For Breast Cancer — AJC/UICC, 1988

Primary Tumor (T)

TX	Primary tumor cannot be assessed
TO	No evidence of primary tumor
Tis	Carcinoma in situ: Intraductal carcinoma, lobular carcinoma in situ, or Paget's disease of the nipple with no tumor
T1	Tumor 2 cm. or less in greatest dimension
T1a	0.5 cm. or less in greatest dimension
T1b	More than 0.5 cm., but not more than 1 cm. in greatest dimension
T1c	More than 1 cm., but not more than 2 cm. in greatest dimension
T2	Tumor more than 2 cm., but not more than 5 cm. in greatest dimension
T3	Tumor more than 5 cm. in greatest dimension
T4	Tumor of any size with direct extension to chest wall or skin
T4a	Extension to chest wall*
T4b	Edema (including peau d'orange) or ulceration of the skin of the breast or satellite skin nodules confined to the same breast
T4c	Both (T4a and T4b)
T4d	Inflammatory carcinoma

Regional Lymph Nodes (N)

N X	Regional lymph nodes cannot be assessed (e.g., previously removed)
N O	No regional lymph node metastasis
N 1	Metastasis to movable ipsilateral axillary lymph node(s)
N 2	Metastasis to ipsilateral axillary lymph node(s) fixed to one another or to other fixtures
N 3	Metastasis to ipsilateral internal mammary lymph node(s)

Stage Grouping

Stage 0	Tis	NO	MO
Stage 1	T1	NO	MO
Stage IIA	T0	N1	MO
	T1	N1	MO
	T2	NO	MO
Stage IIB	T2	N1	MO
	T3	NO	MO
Stage IIIA	T0	N2	MO
	T1	N2	MO
	T2	N2	MO
	T3	N1,N2	MO
Stage IIIB	T4	Any N	MO
	Any T	N3	MO
Stage IV	Any T	Any N	M1

* Fixation of the tumor to the pectoral fascia is no longer recorded for staging purposes.

American Joint Committee on Cancer Manual for Staging of Cancer. 3rd Ed., J.B. Lippincott, Philadelphia, PA, 1988.

findings on breast aspiration cytology do not exclude the presence of malignancy in a solid mass. Core needle biopsy, a diagnostic technique that yields definitive histologic information and is most readily used in evaluating solid breast mass, as presented in Fig 1.

The technique of open breast biopsy was once a matter of personal preference or institutional tradition. The advent of breast conservation treatment for invasive carcinomas now requires that excisional breast biopsies for suspected carcinomas be planned with two major goals in mind: tumor-free margins, and a cosmetically acceptable result. If aspiration or core needle biopsy has confirmed the presence of carcinoma, the patient and surgeon must consider the feasibility of breast conservation on the basis of tumor size and location, breast size, and mammographic findings. The surgeon must be familiar with the incisions best suited for this approach. The resected tumor should be completely surrounded by normal-appearing fat and breast tissue. Generally, a 2 cm margin in all directions is sufficient. It is critical that all breast biopsy specimens be submitted fresh to the pathologist for hormone receptor studies and that all margins be inked to ensure complete tumor excision. After meticulous hemostasis, the breast tissue is not approximated, to avoid parenchymal deformities, and drains are not used. After the skin is closed, a pressure dressing is applied. The next step in management is planned after histological assessment of the resected specimen.

Treatment of Stage I and Stage II Carcinoma of the Breast

Every woman with breast carcinoma should have an objective explanation of the advantages and disadvantages of mastectomy and breast conservation treatment. The following is a brief analysis of various options currently available for treatment of women with stage I and II breast carcinoma.

Radical Mastectomy

Halsted's radical mastectomy, the gold standard of the first half of this century, was rapidly replaced by the modified mastectomy during the early 1970s. Radical mastectomy involves the en bloc resection of the entire breast, the pectoral muscles, and the axillary contents. Radical mastectomy is not indicated in the treatment of most patients with stages I or II breast carcinoma. However, the operation may be indicated in carefully selected patients with large breast tumors that have penetrated the pectoral fascia and clearly invaded the pectoral muscles. In addition, it provides excellent local tumor control following neoadjuvant chemotherapy for patients with locally advanced carcinomas invading the pectoral muscles. The goal of surgery in this setting is to obtain tumor-free margins, minimizing local recurrence.

Modified Radical Mastectomy

At present, total mastectomy and en bloc axillary dissection remains the standard therapy when comparing results of other alternative treatments. This operation is definitely recommended for patients with invasive carcinomas over 4 cm. in size and those with extensive intraductal carcinoma. It is also indicated as the primary therapeutic modality in patients with small breasts and large primary tumors where resection with adequate margins would give an unacceptable cosmetic result. Mastectomy is also indicated for centrally located carcinomas close to the areola and nipple, where removal of a large amount of breast, including the areola and nipple, would be cosmetically unacceptable. Furthermore, modified radical mastectomy should be recommended for patients who have undergone segmental mastectomy with inadequate surgical margins in whom re-excision of the previous biopsy cavity would result in loss of most of the breast tissue or violation of the pectoral fascia and muscle. Finally, mastectomy should be the treatment of choice for patients who experience recurrences following breast conservation treatment.

Segmental Mastectomy Alone

Lumpectomy, tylectomy, and segmental mastectomy have become synonyms in the treatment of patients with stage I and II breast carcinoma. The landmark study by Fisher and associates, which compared total mastectomy to segmental mastectomy with or without radiation, revealed that among patients with negative axillary nodes, 12% of those who received radiation therapy following segmental mastectomy developed recurrence in the ipsilateral breast, compared with 37% of those treated by segmental mastectomy without radiotherapy. This difference was even more striking in patients with axillary lymph node metastases (6% vs 43%).[10] It has become generally accepted that there is no place for segmental mastectomy alone for treatment of invasive breast carcinoma, save for rare exceptions. Such an exception might be an elderly and infirm woman whose life expectancy is less than the risk of recurrent disease in the ipsilateral breast.

Segmental Mastectomy, Axillary Dissection, and Breast Irradiation

Breast preservation treatment for patients with stage I and stage II breast carcinoma must include three critical elements: wide excision of the primary tumor with histologically clear margins, axillary lymph node dissection of at least levels I and II, and breast irradiation. The indications for breast conservation therapy have been reviewed previously.[11] Briefly, patients with stages I and II breast carcinoma are candidates for breast conservation treatment. The primary tumor should be 4 cm or less in greatest dimension. Signs of locally advanced disease, such as peau d'orange or skin edema, skin retraction or epidermal involvement, must not be present. The patient must desire breast preservation and be willing to undergo axillary dissection and breast irradiation. The anticipated cosmetic result must be satisfactory to the surgeon and radiotherapist.

The most prominent randomized clinical trials comparing mastectomy with breast conservation treatment, the National Surgical Adjuvant Breast Project B-06 Study[10] (segmental mastectomy) and the Milan Trial[12] (quadrantectomy), have demonstrated the feasibility of the treatment and comparable survival rates between treated groups. These two major studies, with the recent update of the B-06 Study,[13] have withstood rigorous critique and clearly represent sound contributions in breast cancer treatment. One of the criticisms of the earlier NSABP-B06 report[10] was the short-term follow-up and uncertainty of patient outcome beyond five years. In the more recent studies, follow-

Table 3
Contraindications to Breast Conservation * Treatment

Absolute	Relative
Invasive carcinomas > 4 cm.	Subareolar tumor location
Extensive intraductal carcinomas	Small breast/large primary (disproportionate relationship)
Multicentric invasive carcinomas	Large, pendulous breasts, difficult to treat by irradiation
Positive margins of definitive segmental resection specimen	Anticipated poor patient compliance with radiotherapy and/or follow-up
Tumor fixation to pectoral muscle	
Locally advanced breast carcinoma	
Medical contraindications to radiotherapy**	

* Segmental mastectomy, axillary dissection, breast irradiation
** Systemic lupus erythematous and other collagen vascular diseases

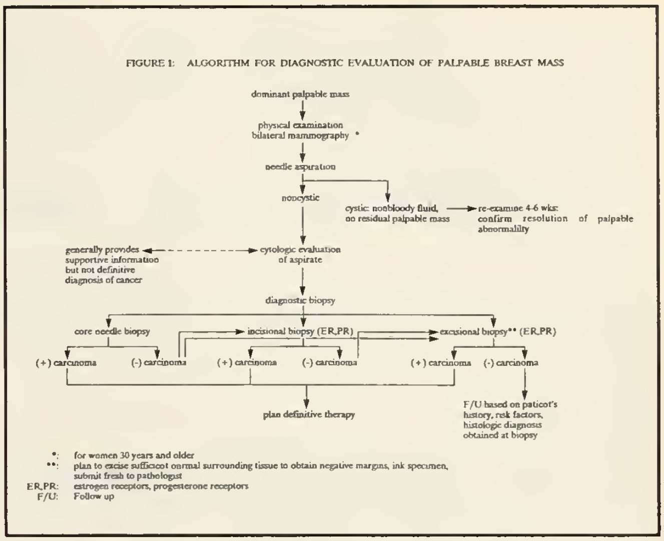
FIGURE 1: ALGORITHM FOR DIAGNOSTIC EVALUATION OF PALPABLE BREAST MASS
dominant palpable mass
physical examination
bilateral mammography *
needle aspiration
noncystic
cystic: nonbloody fluid, no residual palpable mass
re-examine 4-6 wks: confirm resolution of palpable abnormality
generally provides supportive information but not definitive diagnosis of cancer
cytologic evaluation of aspirate
diagnostic biopsy
core needle biopsy
incisional biopsy (ER,PR)
excisional biopsy** (ER,PR)
(+) carcinoma
(-) carcinoma
(+) carcinoma
(-) carcinoma
(+) carcinoma
(-) carcinoma
plan definitive therapy
F/U based on paticot's history, risk factors, histologic diagnosis obtained at biopsy
*: for women 30 years and older
**: plan to excise sufficiont onrmal surrounding tissue to obtain negative margins, ink specimen, submit fresh to pathologist
ER,PR: estrogen receptors, progesterone receptors
F/U: Follow up

Fig. 1. Algorithm for Diagnostic Evaluation of Palpable Breast Mass

up is in excess of eight years, and 90% of the women treated with breast irradiation after lumpectomy were free of disease.[13] In contrast, only 61% of women not treated with irradiation after lumpectomy were free of disease ($P < 0.001$). Breast conservation treatment resulted in an overall survival rate that was not significantly different from that observed after total mastectomy (71%). The study also sheds additional light on the significance of local recurrence after breast conservation treatment. Despite a higher local recurrence rate in the ipsilateral breast among those who were not irradiated, the distant disease-free survival rates among all groups were not significantly different. While these data suggest that local recurrence in the preserved breast is not a manifestation of disseminated disease, the importance of local tumor control cannot be overemphasized. For instance, in a recent study, Stotter and associates, from the M.D. Anderson Cancer Center, reported on 536 patients with early breast cancer treated with breast conservation therapy. While the actuarial failure rate at five years was 9%, it doubled at 10 years.[14] Thus, the risk of local treatment failure is a long-term problem that requires strict surveillance. These investigators also demonstrated that younger patients were at a higher risk of local and regional failure than older patients, and that there was a significantly higher incidence of advanced recurrence with higher initial tumor stage. Patients in whom local-regional recurrence was at an advanced stage experienced a median survival time of only 37 months. These observations suggest that patients with larger breast tumors are at high risk of advanced relapse.[14] It is to be emphasized that the use of conservative therapy in clinical practice must include strict adherence to the eligibility requirements under which randomized patients were treated.[12,13] Failure to exercise sound judgment in patient selection may lead to undertreatment and expose patients to the consequences of recurrence. The absolute and relative contraindications for breast conservation management are listed in Table 3.

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The Authors

MARVIN J. LOPEZ, M.D., F.A.C.S., F.R.C.S.
DOROTHY P. ANDRIOLE, M.D.

The authors are with the Department of Surgery at Washington University School of Medicine and are attending surgeons at Barnes Hospital in St. Louis, Missouri.

Reprints

Marvin J. Lopez, M.D.
5102 Queeny Tower
Barnes Hospital Plaza
St. Louis, MO 63110

Age at Death: A Three Hospital Urban, Suburban, and Small Town Study

Robert Paine, M.D., Boyd E. McCracken, M.D., Sandra L. Brauer, R.N., Jan Chatman, B.S.M.R.A., Rimmon S. Sachs, M.S., Michael J. Badolato, Robert B. Johnson, and **Melissa Kaufman**
St. Louis, Missouri

Comparison of the ages of patients dying at three interrelated St. Louis hospitals in 1988 has been used to study the results of similar high-quality acute hospital care when provided to dissimilar populations. The data presented by the authors leads them to conclude that in this era of mounting health costs, we have not, at least as recently as 1988, realized that an ounce of prevention if worth a pound of cure.

The adverse effects of poverty upon health and longetivity have been attributed on the one hand to social, psychological, environmental, nutritional, and educational factors and on the other hand, to inadequate medical care. The interrelation of two hospitals in St. Louis and one in a nearby small community in southern Illinois has provided an opportunity to examine the contribution of high-quality acute medical care toward the health status of dissimilar populations.

Hospitals

St. Luke's Hospital is a private, 493-bed not-for-profit general hospital established in 1975 in St. Louis County.

St. Louis Regional Medical Center is a private, mid-city 304-bed, not-for-profit general hospital established in 1985 to replace two municipal hospitals serving the indigent residents of St. Louis City and St. Louis County.

Both hospitals are served by the medical house and attending staff of board-certified or board-eligible full-time and voluntary faculty, medical residents and fellows of St. Luke's Hospital, and other physicians of comparable stature. Surgery and other services at Regional are directed by the faculty of Washington University Medical School.

Utlaut Memorial Hospital in Greenville, Ill., serves a community of 5,000 people and its surrounding rural agricultural region. Many of the staff physicians are certified by the Board of Family Practice. Other physicians are board-certified consultants; many are also St. Luke's Hospital staff members.

In 1988 there were 15,305 admissions to St. Luke's Hospital. There were 4,994 patients between ages 20 and 44; there were 3,373 between age 45 and 64; and there were 4,331 who were 65 years old or older. Twenty-nine percent were Medicare patients, and 1.5% were Medicaid patients. There were 341 deaths among patients age 20 or older, with an overall hospital mortality rate of 2.3%. Ninety-four percent of patients at St. Luke's were white; 4.8% were black.

In the same year, there were 13,305 admissions to

AGE AT DEATH

	Regional/ St. Luke's	Male Regional/ St. Luke's	Female Regional/ St. Luke's	Greenville
ALL-CAUSES	61/74	—	—	78.5
CARDIAC	63/78	58/76	66/79	75.5
AMI	66/75	63/74	69/75	72.5
CARDIO. PULM. ARREST	62/76	55/61	66/68	74
CANCER	56/66	60/69	56/64	78
G.I.	54/82	52/78	NS/83	—
LIVER-G.B.	43/63	43/44	38/66	—
RESPIRATORY	57/77	55/76	63/76	—
PNEUMONIA	64/81	58/78	70/81	83
RENAL—G.U.	68/75	61/75	68/72	83
NEUROLOGIC	60/78	56/73	71/79	80
SEPTICEMIA	76/72	67/67	80/76	—
MISCELLANEOUS	53/76	—	—	—
AIDS	28/40	—	—	—

Table 1. Median age at death.

St. Louis Regional Medical Center. In the 12-month period, 6,623 patients were 15 to 45 years old; 1,603 were 46 to 65 years old; and 869 were 65 years old or older. Twenty-four percent were Medicare patients, and 38% were Medicaid patients. There were 344 deaths among patients age 20 or older, with an overall hospital mortality rate of 2.79%. Nineteen percent of those admitted to Regional were white, and 81% were black.

The socioeconomic status of the St. Luke's clientele, who come from Missouri and Illinois, was predominantly middle- and upper-class, while those at Regional were almost exclusively from a low socioeconomic category.

There were 1,247 admissions to the Greenville hospital in 1988, with an overall mortality rate of 3.3%. The patients admitted to Utlaut were predominantly white, middle-class.

This study is not a comparison of the quality of service rendered by the three hospitals. It is an attempt to observe the longevity of dissimilar groups of patients when they are provided with similar acute medical care.

Methods

We examined one objective parameter, the age at death of all patients age 20 or older in each institution during 1988. After determining the distribution of age at death and the median age at death in each hospital, we examined the most frequently occurring diagnostic categories individually, then grouped the less frequent disorders under a "Miscellaneous" heading. Because of their special nature, patients who died of AIDS were listed in a separate category, despite their relatively small number. The Greenville data include all patients who were transferred from Utlaut Hospital

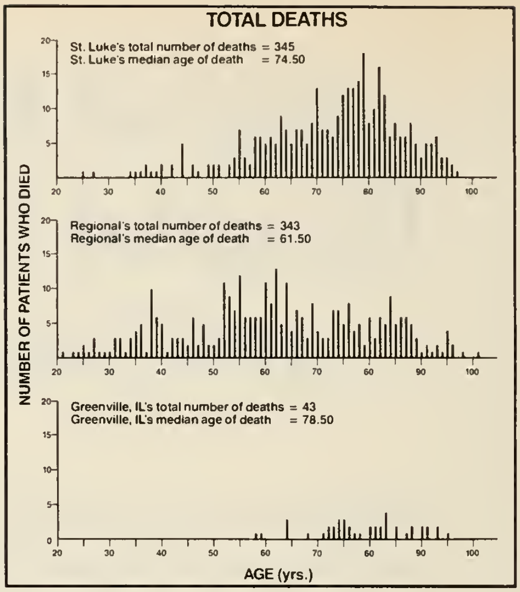

Fig. 1a

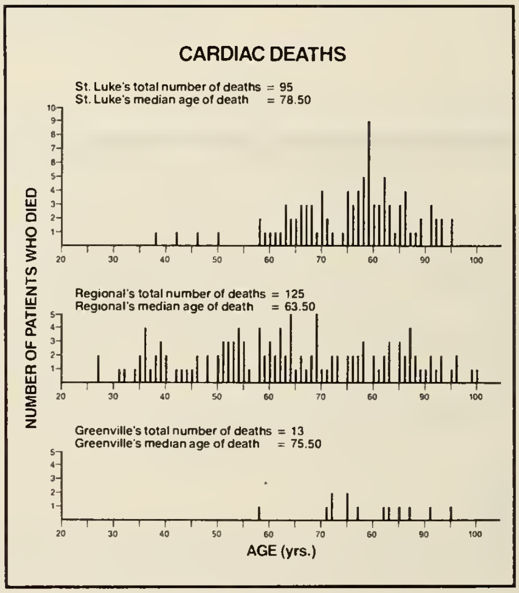

Fig. 1b

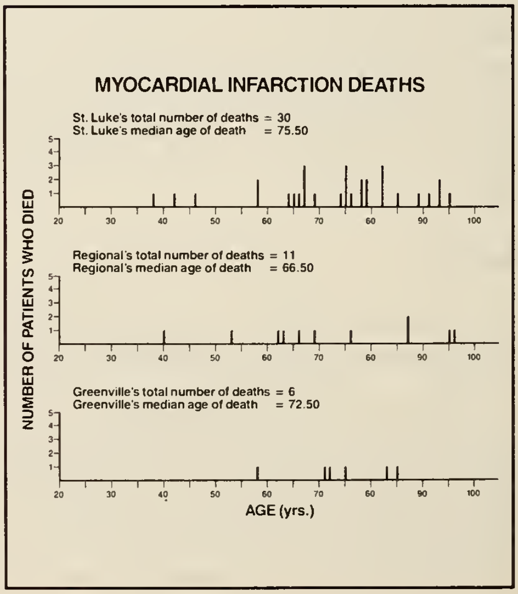

Fig. 1c

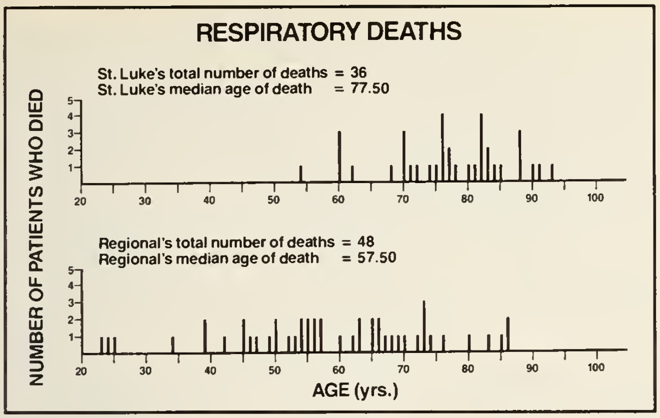

Fig. 1d

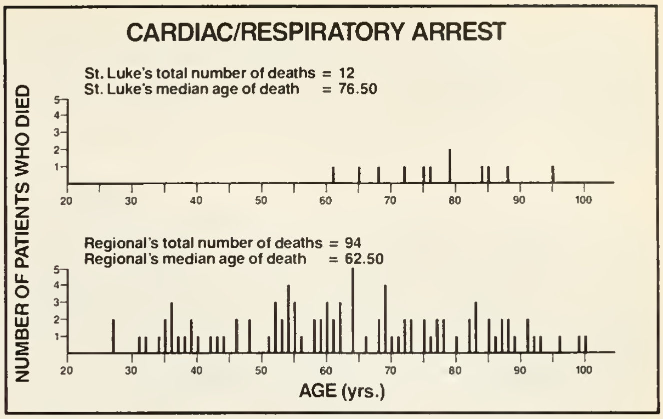

Fig. 1e

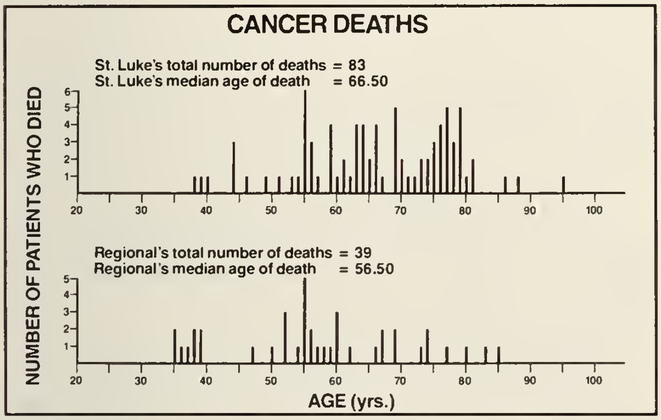

Fig. 1f

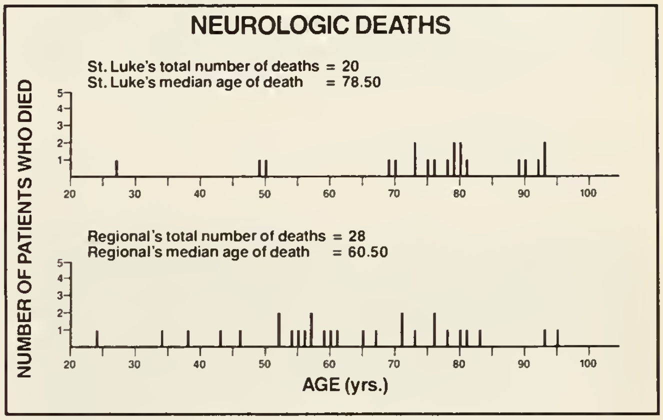

Fig. 1g

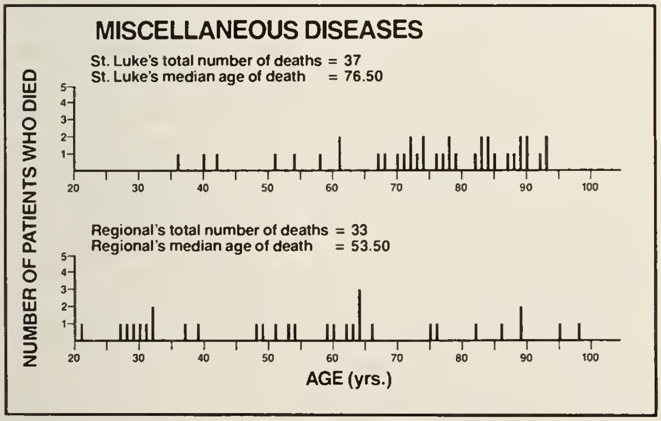

Fig. 1h

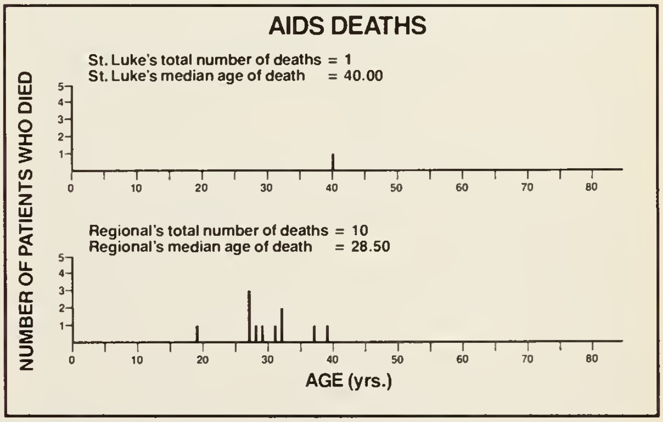

Fig. 1i

Fig. 1a-i. Distribution of age at death and median age at death at St. Louis Regional, St. Luke's and Utlaut Hospitals. **Fig. 1a** shows deaths from all causes. **Fig. 1b-i** shows deaths from common and less common diseases.

to another institution for care. Among the transferees, there was one death.

Results

The ages of all patients who died in 1988 at the three hospitals are shown in Fig 1a. Median age at death at St. Luke's was 74.5 years, at Regional 61.5 years, and at Greenville 78.5 years. Subsequent figures present the most common causes of death: cardiovascular, pulmonary, neurologic, and malignant.

Less common disorders are listed in Table 1. The number of these cases at Regional Medical Center (R) and St. Luke's Hospital (S) were as follows: Genitourinary 7(R)/11(S); gastrointestinal 7(R)/19(S); liver and gallbladder 9(R)/8(S); pneumonia 24(R)/23(S); septicemia 23(R)/12(S). The remaining less numerous diseases have been aggregated in the miscellaneous subset.

Discussion

The retrospective study of 1988 provides humbling evidence that the lives of the poor and the black remain severely shortened. In these three hospital populations, despite quality acute medical care at each institution, the disparity persists and appears in all of the major disease categories as well as the aggregate of the less frequent disorders. The extensive literature documenting health problems of the disadvantaged does not require review here. However, a few correlations of the St. Luke's-Regional-Greenville study are worth noting. The clientele of Regional is predominantly the low socioeconomic group long known to suffer severe health deficits.[1,2] The discrepancy between survival of the Regional patients versus the St. Luke's and Greenville patients resembles that between the low socioeconomic black and white strata and the high economic class of Evans County, Ga., studied intensively for more than two decades.[3] In that analysis, the 20-year survival of the more affluent significantly exceeded the low socioeconomic white and black populations, with 27.1 deaths per thousand person-years versus 32.8 deaths per thousand person-years.

The inequity of educational achievement between the patients at Regional and St. Luke's and Greenville is grossly apparent, and may be a primary determinant of life expectancy. This is borne out in a study of almost 150 nations in which "by far the most consistently powerful predictor of life expectancy was the prevalence of literacy."[1,4]

While the Regional-St. Luke's dichotomy in survival has been observed in other urban-suburban comparisons,[5] the apparent life-extending influence of small-town life in Greenville was notable.

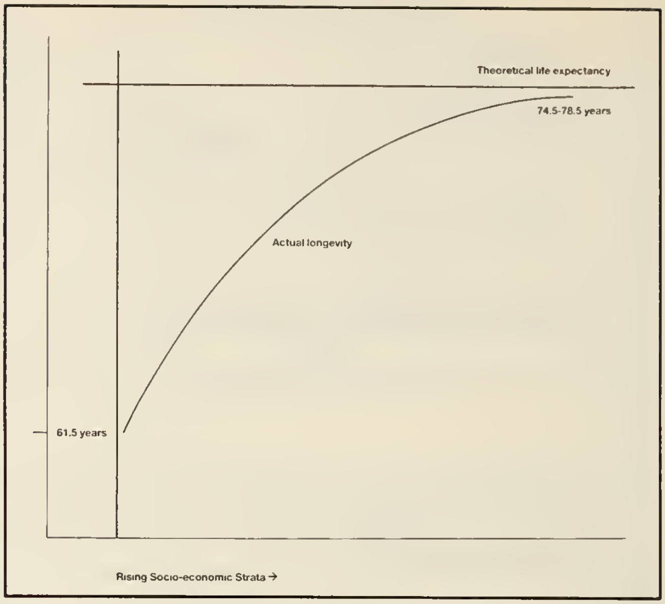

Fig. 2. Longevity with regard to socioeconomic strata.

The demonstration that all disease categories except one were associated with similar shortening of survival recalls the observation that risk factors of coronary disease were equally predictive of all-cause mortality in Evans County.[3]

Psychologic factors have figured to be major determinants of survival.[1,6-9] Their role among the population served by Regional is difficult to establish, although frustration, helplessness, and "Type A" factors are clearly present.

Two observations may be made: While the remarkable frequency of sudden death at Regional represents the occurrence of abrupt cardiopulmonary death in the presence of a variety of primary disorders, this experience resembles that in the Charleston heart study, in which sudden death of black men and women was threefold and one and a half times that of white men and women;[10] and the younger age at death after acute myocardial infarction at Regional likewise parallels experience elsewhere.[11]

Examination of factors affecting life expectancy is complicated by the change in survival that has occurred with time. Between 1940 and 1968, the incidence of ischemic heart disease in black men rapidly increased until it almost equaled that of white men by 1968.[12] Since then, national studies have indicated both rates diminished strikingly.[13,14] However, the decrease has not been uniform. In Los Angeles, mortality due to ischemic heart disease fell 28% between 1970 and 1979, but the decline was found primarily among white men; black and Hispanic men did not enjoy parallel improvement.[15]

Since 1981 governmental policy changes have induced still more rapid alterations in the health status of the poor and marginally poor.[16] In California, reduction in Medi-Cal (California's Medicaid program) availability of health care for hypertensives has been followed by an average 10-mm increase in diastolic blood pressure among those cut off from aid.[17] It may be recalled that 10-mm diastolic pressure difference was associated with a 40% increase in mortality in the Framingham study. The impact of this reduction in health funding has been demonstrated more clearly among the obstetric and pediatric population, however.[18]

The Regional-St. Luke's-Greenville data showing the unequal results of equal acute medical care might appear to support the popular belief that psychological, social, environmental, nutritional, sanitary, and other factors have been *the* important determinants of the nation's health rather than the prowess of its curative medicine.[18,19,20] Such a view, however, fails to take into account the demonstrated effectiveness of vigorously applied modern methods of health protection. A few examples may be presented. Poekolanen and Eskola reported a 63% to 68% decline in mortality of men and women due to amenable diseases between 1968 and 1981 following the introduction of the Finnish National Health Service. They especially credited the improved health status to universal BCG vaccination of infants, advances in therapy of chronic obstructive pulmonary disease, improved control of hypertension, and prevention and management of perinatal complications. These authors attributed 50% of the decline in amenable mortality to the advent of the health service.[21] Gillum and Liu found the impressive decline in coronary heart disease mortality in black and white populations in the United States since 1968 to be due to increased control of hypertension and improved access to effective medical care and, to a lesser degree, to a reduction in smoking.[12]

The Hypertension Detection Follow-up Program (HDFP) found an 18.5% decrease in all-cause mortality in black men and 27.8% reduction among black women during antihypertensive therapy.[4] That effective preventive medicine can be delivered to all socioeconomic classes has been illustrated by the Multiple Risk Factor Intervention Trial (MRFIT), which has documented the "ability to induce extensive change in lifestyle (eating and smoking habits) by both white and black American males of varying educational and socioeconomic backgrounds and also to achieve long-term effective adherence to programs for the treatment and control of hypertension."[22]

The Regional-St. Luke's-Greenville study clearly shows the failure of quality acute medical care to close the health gap between the poor and the not-poor. Life expectancy has steadily increased from 41 years to 72.3 years between 1840 and 1965 in six European countries and one U.S. state. Yet the median age at death of the population served at St. Louis Regional Medical Center is the same as that in the 1930s, while the age at death at St. Luke's Hospital and Utlaut Memorial Hospital exceeded that last calculated in 1965.[23]

Conclusion

The Regional-St.Luke's-Greenville data demonstrate the ineffectiveness of acute medical care in the face of the devastating educational, social, psychological, environmental, and other consequences of poverty. The experience at Regional, where patients are admitted younger and die younger than at St. Luke's, clearly reflects factors outside the realm of the medical profession, but the role of health ignorance and the deficiency in effective individualized preventive medicine are readily apparent in this population. These studies of longevity are graphically depicted in Fig 2, in which the curve of actual longevity approaches the curve of possible life expectancy as an asymptote, with major discrepancies between the actual and the possible among the poor, and minimal deviations among the higher socioeconomic strata. While we would not argue that modern acute medical care should be curtailed, we believe that these data illustrate the fact that additional funds extended in innovative preventive medicine would pay great dividends in life quality and life expectancy.

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The Authors

ROBERT PAINE, M.D.
BOYD E. McCRACKEN, M.D.
SANDRA L. BRAUER, R.N.
JAN CHATMAN, B.S.M.R.A.
RIMMON S. SACHS, M.S.
MICHAEL J. BADOLATO
ROBERT B. JOHNSON
MELISSA KAUFMAN, A.R.T.

Dr. Paine is the chief of the division of Cardiology at St. Luke's Hospital in St. Louis. He is also affiliated with St. Louis Regional Hospital, Utlaut Memorial Hospital and Washington University School of Medicine. Dr. McCracken is affiliated with Utlaut Memorial and St. Luke's Hospitals; Ms. Brauer is a nurse at St. Louis Regional Hospital; Jan Chatman is associate administrator, Health Information Systems, St. Luke's Hospital; Mr. Sachs is a consultant, Cardiac Computer Laboratory, St. Luke's Hospital; Mr. Badolata is record room supervisor at St. Luke's Hospital; Mr. Johnson is administrator of Grady Hospital in Atlanta, GA.; and Ms. Kaufman is medical records librarian at Utlaut Memorial Hospital, Greenville, Illinois.

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Reprints

Robert Paine, M.D.
Chief, Division of Cardiology
St. Luke's Hospital
232 South Woods Mill Road
Chesterfield, MO 63017

Special Article

Educating Missouri Health Professionals About HIV/AIDS: The Missouri MATEC Program

Sue Dabney, M.Ed., M.P.H.
Jefferson City, Missouri

The author describes work being done by the Midwest AIDS Training and Education Center, MATEC, to educate health professionals in the treatment of HIV infection and AIDS.

By the end of January 1990 there were 121,645 cases of AIDS reported in the United States.[1] The Centers for Disease Control estimates that one million Americans are currently infected with the Human Immunodeficiency Virus, and that by the end of 1993 there will be 390,000 to 480,000 cases of AIDS diagnosed in the United States.[2]

Of the 1,384 AIDS cases reported in Missouri as of February 1990, 72% were from Kansas City, St. Louis City, and St. Louis County. Nearly 80% were homosexual or bisexual men, and 20% of all patients were members of a minority (13% of Missouri's population is minority). More than 70% of those affected were under 40 years of age.[3]

Since the first cases were reported to the Centers for Disease Control in 1981, health professionals have required up-to-date information on AIDS. They need good infection control skills to protect themselves and others, risk assessment and testing protocols for their patients, current information on treatment and referral, and instruction in risk reduction and education techniques.

The Health Resources and Services Administration (HRSA), an arm of the U.S. Department of Health and Human Services, is the agency primarily responsible for training health professionals about HIV infection and AIDS. The HRSA has developed a nationwide network of regional Education and Training Centers (ETCs). Each ETC program is located within a university professional school and covers a service area ranging from a large metropolitan area such as Los Angeles, to several states. The United States, including Puerto Rico and the Virgin Islands, is covered by 15 ETC regions.

Missouri is included in the ETC known as the Midwest AIDS Training and Education Center (MATEC). The MATEC program is administered through the University of Illinois-Chicago, and its service area includes Illinois, Indiana, Iowa, Minnesota, Missouri, and Wisconsin.

Missouri MATEC is run by the Missouri Department of Health's Bureau of AIDS Prevention, and the University of Missouri-Columbia, Office of Continuing Medical Education. The program's professional staff includes co-site directors, two consultants, and a program coordinator.

The goal of Missouri MATEC is to deliver quality AIDS and HIV training to all health professionals in the state. "Health profession" is defined broadly to include not only physicians, dentists, and nurses, but also counselors, social workers, dental hygienists, nurses aides, other hospital and nursing home staff, laboratory workers, clergy, nutritionists, and administrators.

Most confirmed HIV-infected patients in Missouri are being treated by a few physicians, who are likely to be infectious disease specialists. As AIDS and HIV infection become more widespread in the 1990s, these few "AIDS experts" will be unable to meet the growing demand for care, and primary care physicians will become responsible for diagnosis and treatment. Specialists in fields unrelated to AIDS will see HIV-infected patients in their practices as the number of infected people in the general population increases. As more infected patients seek care, nurses and other professionals will also see patients with AIDS and HIV infection.

There is a wide range of AIDS expertise among these health professionals. Some, especially the AIDS specialists, work with HIV-infected patients on a regular basis and have the most current information on treatment and infection control. Others, perhaps thinking that the epidemic will not directly affect them, are not keeping up with developments related to the disease.

Missouri MATEC has several approaches to delivering AIDS/HIV education programs. One is to work with other organizations to plan and co-sponsor conferences and workshops. In the past, Missouri MATEC has worked with the Washington University AIDS Clinical Trials Unit, the Kansas City Health Department, the St. Louis city and county health departments, the Kirksville College of Osteopathic Medicine, the Greene County Medical Society, and AIDS Project of the Ozarks (formerly AIDS Project Springfield).

Conferences co-sponsored by Missouri MATEC included "Minority Perspectives on AIDS" (March 28-30, 1989, *St. Louis*); "HIV Update, (May 13, 1989, *Springfield*); "Care of the Person with HIV Infection and AIDS" (October 6, 1989, *St. Louis*); and "Where we are, where we're going . . . AIDS controversies of the 1990s" (October 19-20, 1989, *Kansas City*). They focused entirely on AIDS and HIV infection, and many participants were already working in AIDS treatment, education, and prevention. Each program was CME and CE accredited for physicians and nurses.

Because Missouri MATEC is also interested in reaching health professionals not yet working with HIV-infected patients, the program incorporates AIDS training into continuing education programs focused on other medical topics. For example, Missouri MATEC co-sponsored the 10th Annual Conference on Peritoneal Dialysis, February 8-10, 1990, in Dallas, Texas. The 1,400 conference participants received four hours of AIDS/HIV training as part of the peritoneal dialysis program. Missouri MATEC also co-sponsored the conference "Issues in Black Health Care," October 12-13, 1989, in Kansas City. Two hours of the conference were devoted to HIV infection in the African-American community.

Some of the institutions in greatest need of AIDS/HIV training in Missouri are long-term care facilities. Only a handful of facilities in the state accept patients with AIDS. These few facilities are not able to meet the demand for care. One of the reasons given by administrators for not taking these patients is that their staffs are not adequately training in infection control.

To meet this need, Missouri MATEC developed a three-hour program for nursing home administrators and staff. In 1989 this program was given 10 times in Missouri and reached 266 professionals. To make the information accessible to the more than 950 facilities in the state,[4] Missouri MATEC staff is developing a comprehensive in-service training package for long-term care facilities. The package, which will be available in 1990, includes a training manual with accompanying videotape. It covers transmission, infection control, and psycho-social issues. These materials will be made available, at nominal cost, to Missouri long-term care facilities.

The newest Missouri MATEC initiative is to train the staff of federally funded Community and Migrant Health Center clinics in Missouri to handle HIV-infected patients. Some facilities, especially those in urban areas, are already testing and treating AIDS patients. Many rural clinics, however, have yet to see their first case. Working with the Missouri coalition for Primary Care, local health departments, and the executive directors and staff of the health centers, Missouri MATEC will develop and implement staff training for each facility. The program will cover infection control, risk assessment, treatment, and psycho-social issues relating to AIDS and HIV infection.

In the 18 months that Missouri MATEC has been in operation, the staff has delivered 47 programs on AIDS totaling 15,901 contract hours of training for health professionals.

For more information on the Missouri MATEC program, contact Sue Dabney, Missouri Department of Health, P.O. Box 570, Jefferson City, MO, 65102.

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2. Estimates of HIV Prevalence and Projected AIDS Cases: Summary of a Workshop, October 31 - November 1, 1989. *Morbidity and Mortality Weekly Report*, 1990;39(7):110.

3. Missouri Dept of Health, Bureau of AIDS Prevention: *AIDS Statistics*. Feb 1990, p 1.

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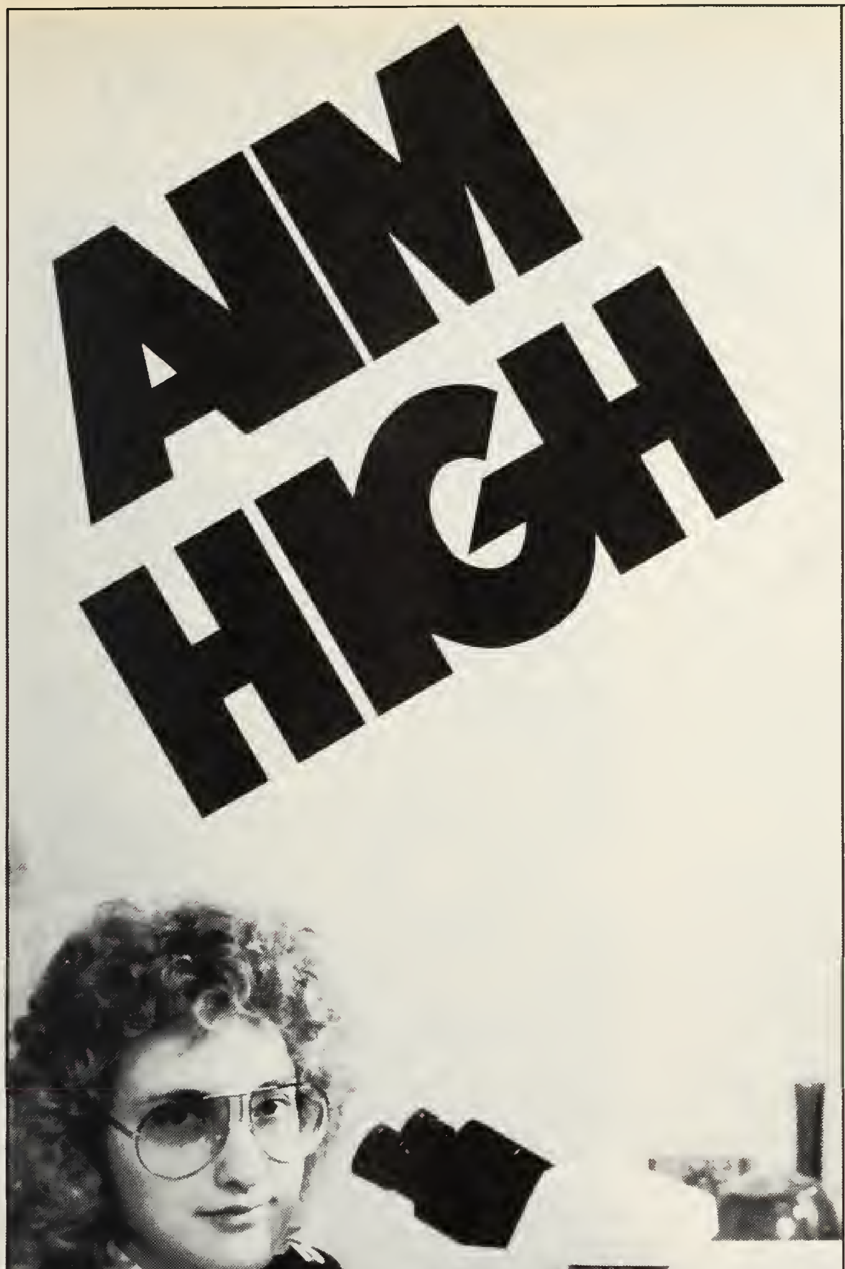

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1. A. Morales et al., New England Journal of Medicine: 1221. November 12, 1981.
2. Goodman, Gilman — The Pharmacological basis of Therapeutics 6th ed., p. 176-188. McMillan December Rev. 1/85.
3. Weekly Urological Clinical letter, 27:2, July 4, 1983.
4. A. Morales et al., The Journal of Urology 128: 45-47, 1982.

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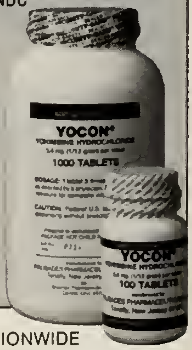

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September

8 - 9 **Combined TGS/TPA Scientific Assembly: Aging and Mental Illness** — Location: Stouffer Nashville Hotel, Nashville Convention Center, Nashville, TN. Contact: James S. Powers, M.D., *President-Elect,* TGS, Vanderbilt University Medical Center, Division of General Internal Medicine, Nashville, TN 37232. 615/322-2547 or 615/242-1505.

10 **19th Annual Wendell G. Scott Lecture: The Relative Value of Radiology** — Location: Mallinckrodt Institute of Radiology, St. Louis, MO. Contact: Ronald G. Evens, M.D., Mallinckrodt Institute of Radiology, 510 S. Kingshighway, St. Louis, MO 63110. 314/362-7100.

11 - 13 **Introduction to Doppler Echocardiography** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: Kathleen Habermehl, Continuing Medical Education, 1402 S. Grand Blvd., St. Louis, MO 63104. 314/577-8897.

12 **The Fifth Annual John V. King, M.D., Family Practice Symposium** — Location: St. John's Mercy Medical Center, von Gontard Conference Center, St. Louis, MO. Contact: Judith L. O'Guin, St. John's Mercy Medical Center, 615 S. New Ballas Road, St. Louis, MO 63141-8221. 314/569-6290.

12 **Current Concepts in Management of Diabetic Nephropathy** — Location: Hyatt Regency, St. Louis, MO. Contact: St. Louis University Continuing Medical Education, 1402 S. Grand Blvd., St. Louis, MO 63104-1083. 1-800-553-2712.

14 - 15 **Dermatology** — Location: Holiday Inn Executive Center, Columbia, MO. Contact: Barry Kling, University of Missouri-Columbia School of Medicine, Office of Continuing Medical Education, MA215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

14 - 15 **2nd Annual Update Course in Ophthalmology** — Location: Washington University School of Medicine, St. Louis, MO. Contact: Kathy Ryan, Box 8096, 660 S. Euclid Ave., St. Louis, MO 63110. 314/362-5722.

15 - 16 **Cornea and Contact Lens Update** — Location: Bethesda Eye Institute, St. Louis, MO. Contact: St. Louis University CME Office, 1402 S. Grand Blvd., St. Louis,MO 63104-1083. 1-800-533-2712.

17 - 19 **Memory Function in Aging and Aging Related Changes Symposium** — Location: Clarion Hotel, St. Louis, MO. Contact: Ms. Carolyn Leach, Conference Secretary, VA Medical Center, GRECC(111G-JB), St. Louis, MO 63125. 314/894-6510.

19 **Third Annual Trauma Care Conference** — Location: St. John's Mercy Medical Center, von Gontard Conference Center, St. Louis, MO. Contact: Judith L. O'Guin, St. John's Mercy Medical Center, 615 S. New Ballas Road, St. Louis, MO 63141-8221. 314/569-6290.

20 - 22 **Pediatric Advanced Cardiac & Trauma Support for Life and Pediatric Advanced Life Support (PACTS/PALS)** — Location: Cardinal Glennon Children's Hospital, St. Louis,MO. Contact: St. Louis University CME Office, 1402 S. Grand Blvd., St. Louis, MO 63104-1083. 1-800-553-2712.

25 - 26 **Transesophageal Doppler Echocardiography Course** — Location: St. Louis University Medical Center, St. Louis,MO. Contact: St. Louis University CME Office, 1402 S. Grand Blvd., St. Louis, MO 63104-1083. 1-800-553-2712.

October

1 - 5 **Medicolegal Death Investigator Training Course** — Location: St. Louis University, Margaret McCormick Doisy Learning Resources Center, St. Louis, MO. Contact: St. Louis University CME Office, 1402 S. Grand Blvd., St. Louis, MO 63104-1083. 1-800-553-2712.

3 **Update in Psychiatry** — Location: St. John's Mercy Medical Center, von Gontard Conference Center, St. Louis, MO. Contact: Judith L. O'Guin, St. John's Mercy Medical Center, 615 S. New Ballas Road, St. Louis, MO 63141-8221. 314/569-6290.

5 - 6 **3rd Annual Alumni Weekend** — Location: CME Auditorium, MA217, University of Missouri School of Medicine, Columbia, MO. Contact: Barry Kling, Office of Continuing Education, MA215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

5 - 7 **Ozark Chest Conference X: Pulmonary Fibrosis, Pulmonary Rehabilitation and Nocturnal Ventilation** — Location: Tan-Tar-A Resort Hotel, Lake of the Ozarks, MO. Contact: American Lung Association of Western Missouri, 2007 Broadway, Kansas City, MO 64108. 816/842-5242.

8 **City-Wide Radiology Conference: MRI of the Knee - Present and Future** — Location: Mallinckrodt Institute of Radiology, Washington University School of Medicine, St. Louis, MO. Contact: R. Gilbert Jost, M.D., Chief of Diagnostic Radiology, Mallinckrodt Institute of Radiology, 510 S. Kingshighway, St. Louis, MO 63110. 314/362-7130.

9 -11 **Introduction to Doppler Echocardiography** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: St. Louis University CME Office, 1402 S. Grand Blvd., St. Louis, MO 63104-1083. 1-800-5532712.

12 - 13 **Advanced Trauma Life Support Provider Course** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: St. Louis University CME Office, 1402 S. Grand Blvd., St. Louis, MO 63104-1083. 1-800-553-2712.

19 **Rheumatology 1990** — Location: Lodge of the Four Seasons, Lake Ozark, MO. Contact: Barry Kling, University of Missouri-Columbia School of Medicine, Office of Continuing Education, MA215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

19 - 21 **Missouri Chapter of American College of Physicians and Missouri Society of Internal Medicine, Regional Meeting** — Location: Lodge of the Four Seasons, Lake Ozark, MO. Contact: Mary Ann Morris, P.O. Box 1953, Lee's Summit, MO 64063. 816/525-5800.

26 - 27 **Black Health Care** — Location: Allis Plaza Hotel, Kansas City, MO. Contact: Barry Kling, University of Missouri-Columbia School of Medicine, Office of Continuing Education, MA215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

26 - 27 **Endoscopic & Laser Surgery: Advances Complications and Controversies** — Location: St. Luke's Hospital, St. Louis, MO. Contact: Patty Fogerty, Program Coordinator, Dept. of Education, St. Luke's Hospital Institute for Health Education, 232 South Woods Mill Road, St. Louis, MO 63017. 314/851-6006.

29 **Conference on Insomnia for the Primary Care Physician** — Location: Ritz-Carlton Hotel, St. Louis, MO. Contact: Sleep Disorders Center, Deaconess Hospital, 6150 Oakland Ave., St. Louis, MO 63139. 314/768-3100.

November

1 - 3 **68th Annual Fall Conference** — Location: Ritz-Carlton Hotel, Kansas City, MO. Contact: Linda F. Smutz, Kansas City Southwest Clinical Society, 7920 Ward Parkway, Suite 205, Kansas City, MO 64114. 816/523-3383.

1 - 3 **Clinical Allergy for the Practicing Physician** — Location: Ritz-Carlton Hotel, St. Louis, MO. Contact: Cathy Caruso, Office of Continuing Medical Education, Washington University School of Medicine, 660 S. Euclid, Box 8063, St. Louis, MO 63110. 314/325-9862 or 314/362-6893.

1 - 4 **Microsurgery of the Lumbar & Cervical Spine** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: St. Louis University CME Office, 1402 S. Grand Blvd., St. Louis MO 63104-1083. 1-800-553-2712.

5 - 7 **Microsurgical Approaches to Meningiomas and other Skull Base Tumors** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: St. Louis University CME Office, 1402 S. Grand Blvd., St. Louis, MO 63104-1083. 1-800-553-2712.

6 - 8 **Introduction to Doppler Echocardiography** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: St. Louis University CME Office, 1402 S. Grand, St. Louis, MO 63104-1083. 1-800-553-2712.

8 - 10 **Pediatrics Advanced Cardiac & Trauma Life Support for Life and Pediatric Advanced Life Support (PACTS/PALS)** — Location: Cardinal Glennon Children's Hospital, St. Louis, MO. Contact: St. Louis University CME Office, 1402 S. Grand Blvd., St. Louis, MO 63104-1083. 1-800-553-2712.

9 - 10 **OB-GYN Update** — Location: Holiday Inn Executive Center, Columbia, MO. Contact: Barry Kling, University of Missouri-Columbia School of Medicine, Office of Continuing Education, MA215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

9 - 11 **16th Annual Symposium: Anesthesia and the Geriatric Patient** — Location: Marriott Pavilion Hotel, One Broadway, St. Louis, MO. Contact: S. Mark Poler, M.D., Geriatric Symposium, Dept. of Anesthesiology, Box 8054, Washington University School of Medicine, 660 S. Euclid, St. Louis, MO 63110. 314/362-6973.

12 **City-Wide Radiology Conference** — Location: Mallinckrodt Institute of Radiology, St. Louis, MO. Contact: R. Gilbert Jost, M.D., Chief of Diagnostic Radiology, Mallinckrodt Institute of Radiology, 510 S. Kingshighway, St. Louis, MO 63110. 314/362-7130.

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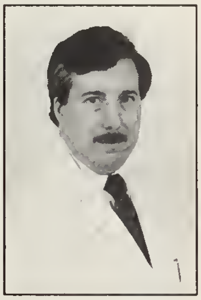
Medical School News

St. Louis University

William S.M. Wold, Ph.D., professor of molecular virology at the Institute for Molecular Virology, St. Louis University School of Medicine, has been awarded two five-year grants totalling almost $1.4 million from the National Institutes of Health (NIH). The awards, from the National Institute of Allergy and Infectious Diseases and the National Cancer Institute, will be used to conduct research on human adenoviruses.

William Wold, Ph.D.

David J. Schanzlin, M.D., director of Bethesda Eye Institute and professor and chairman of the department of ophthalmology, St. Louis University School of Medicine, has received a four-year $856,300 continuation grant from the National Eye Institute. Dr. Schanzlin will use the award to further define the biological role of the keratocyte (predominant cell type of the cornea) in establishing and maintaining corneal clarity.


David Schanzlin, M.D.

Dr. Schanzlin joined Bethesda Eye Institute at St. Louis University Medical Center in 1987.

Thomas C. Westfall, Ph.D., professor and chairman of the department of pharmacology, St. Louis University School of Medicine, has received a five-year, $785,539 renewal grant from the National Heart, Lung, and Blood Institute. The grant will support research attempting to determine the cause of hypertension.

Arnold Kaplan, Ph.D., professor of microbiology, St. Louis University School of Medicine, has received a three-year, $255,000 grant from the National Science Foundation. The grant will be used to study "Routing of Dictyostelium Beta-Hexosaminidase." Dr. Kaplan also hopes to gain a better understanding of how lysosomes are formed, since they play such an important role in the life process.

Raj Nakra, M.D., associate professor of psychiatry and human behavior in the division of geriatric psychiatry, St. Louis University School of Medicine, has been awarded a one-year, $96,692 grant to study and evaluate safety and efficacy of the drug Fluoxetine (Prozac) in the elderly depressed patient.

Statistics indicate that depression affects one in five people in the United States. Dr. Nakra's focus will be to evaluate the efficacy and side effects of Fluoxetine. St. Louis University Medical Center is one of 24 centers in the United States conducting this study.

Gregory H. Branham, M.D., has been named assistant professor of otolaryngology at St. Louis University School of Medicine. Dr. Branham will also hold the position of director of the department's division of facial plastic and reconstructive surgery. The announcement was made by **Michael D. Maves, M.D.**, professor and chairman of the department of otolaryngology-head and neck surgery.

Dr. Branham came to St. Louis University School of Medicine from Washington University School of Medicine in St. Louis, where he had been a fellow in facial plastic and reconstructive surgery for the past year.

The department of neurology at St. Louis University School of Medicine appointed five new faculty members and expanded services to offer programs in neurorehabilitation and neurologic intensive care.

Marc D. Malkoff, M.D., has been named assistant professor of neurology and section director of neurologic intensive care and **John G. Schmidt, M.D.**, has been named an instructor in neurology and section director of neurorehabilitation. The announcement was made by **John B. Selhorst, M.D.**, professor and chairman of the department of neurology.

Dr. Malkoff comes to St. Louis University School of Medicine from Johns Hopkins Hospital in Baltimore, Md., where he completed two years of fellowship training in the neurosciences critical care unit.

Dr. Schmidt comes to St. Louis University School of Medicine from the Burke Rehabilitation Hospital in White Plains, N.Y., where he was a fellow in neurorehabilitation.

The three other faculty members appointed are: **Waqar U. Mirza, M.D.**, instructor in the Greater Midwest Epilepsy Center; **Peggy M. Goulding, Ph.D.**, assistant professor in neuropsychology; and **Jo H. Bonner, M.D.**, clinical instructor in neuromuscular disease, serving a one-year fellowship.

Dr. Mirza comes to St. Louis following four years of advanced training in treating epilepsy at Wake Forest University in Winston-Salem, N.C., where he studied under one of the country's leading epileptologists, **Kiffin Penry, M.D.**

Dr. Goulding was program director for the PremierCare Neurorehabilitation Program at Bethesda General Hospital in St. Louis before joining the faculty at St. Louis University School of Medicine, while Dr. Bonner trained at Case Western Reserve University in Cleveland, Ohio in neurology for two years before joining the faculty of St. Louis University School of Medicine.

The department of otolaryngology at St. Louis University School of Medicine is now evaluating pediatric patients for the use of the 22 channel cochlear implant for use in children ages 2-17.

The cochlear implant is a device that can literally change the lives of certain individuals who have a profound hearing loss. These patients receive little or no benefit from traditional hearing aids. Suitable pediatric candidates include children born with hearing who are deafened as a result of disease, most often by meningitis.

The FDA approved the use of cochlear implants in adults in 1984. The device allows patients to distinguish sounds by converting noises into electrical impulses. The impulses are transmitted to an internal receiver which stimulates nerve fibers within the ear. The brain then interprets the signal as sound.

The cochlear implant allows deaf people to hear voices, telephones, alarm clocks, warning sirens and other sounds. Surgical implantation of the device rarely takes more than two hours and requires a 2-3 day hospital stay. The majority of the surgical procedures will be performed at Cardinal Glennon Children's Hospital which is affiliated with St. Louis University School of Medicine.

Researchers at St. Louis University School of Medicine say a recent study indicates physicians nationwide need to be more aware of debilitating, but often treatable, medical problems in the elderly.

The results of the study appear in a recent issue of the *Journal of the American Geriatrics Society*. Co-investigators include **Douglas Miller, M.D.**, associate professor of geriatric medicine, and **John Morley, M.D.**, *Dammert professor* and chairman of the division of geriatric medicine, St. Louis University School of Medicine.

The research, conducted while the two were associates at the University of California at Los Angeles, found that physicians tend to concentrate on acute problems while ignoring chronic problems so often seen in older patients.

The study found that 10% of patients older than 70 who were seeing a general physician had depression. In 95% of these patients, their depression had not been previously identified by their primary care physician.

■ In an effort to promote enthusiasm for careers in science and laboratory research, the department of physiology at St. Louis University School of Medicine has selected two local high school science teachers to participate in a new and unique learning experience.

Kevin Brown, a chemistry and physics teacher at St. Joseph's Academy School, and **William Brush**, head of the science department at Soldan High School in St. Louis, were selected from almost 100 applicants to participate in an eight-week summer program offering advanced science education training through hands-on laboratory research. The two high school teachers are now working on full-time research projects.

According to **Mary F. Ruh, Ph.D.**, professor and interim chairman of the department of physiology, the program was developed after the faculty noticed increasingly gloomy reports concerning the status of science education in America.

Both teachers will receive a stipend during the course of their research. Brown is attempting to determine the presence of specific receptor proteins for the steroid reproductive hormone estrogen in cells of the immune system. Brush is researching the release of adenosine triphosphate (ATP) from red blood cells of various species.

Dr. Ruh says the success of the high school science teacher research program will be determined by the overall impact it has on the method of science teaching in the classroom.

■ A child who falls asleep during school or while watching television may not be inattentive, he may have a sleeping disorder. Although rare in preteenaged children, St. Louis area researchers have detected the presence of narcolepsy in children as young as eight years old.

The researchers' findings concerning preteenaged narcolepsy appeared in a recent edition of *Pediatrics*. Co-investigators of the study include: **Suresh Kotagal, M.D.**, associate professor of pediatric neurology, St. Louis University School of Medicine, and director of pediatric neurology, Cardinal Glennon Children's Hospital; **Kristyna M. Hartse, Ph.D.**, associate professor of psychiatry and human behavior and director of the Sleep Disorders Center in the division of behavioral medicine, St. Louis University School of Medicine; and **James K. Walsh, Ph.D.**, director of the Sleep Disorders Center at Deaconess Hospital in St. Louis.

The study, conducted between 1982-1987, detected narcolepsy in four out of an estimated 4,000. These four children exhibited signs of excessive daytime sleepiness and behavioral problems. All four had a history of morning or afternoon napping and they frequently fell asleep in school classes or while talking, eating, reading, or watching television.

The researchers note that diagnosing narcolepsy in children can be a lengthy process. But, they say, if a child has a learning problem or difficulty in concentrating or staying awake, it is important that a comprehensive history of sleep-wake function be taken to rule out any underlying sleep disorder.

Washington University

■ **Glen Hortin, M.D., Ph.D.**, assistant professor in pediatrics and pathology at Washington University School of Medicine in St. Louis, recently received the *Charles E. Culpeper Foundation Scholarship in Medical Science* for 1990.

With the award, Hortin will receive $100,000 a year for three years to fund his research focusing on the interactions of a family of molecules in blood called the complement system, which forms part of the body's immune defense in warding off disease.

The scholarship program was established in 1987 as an extension of the Culpeper Foundation's ongoing commitment to medical science, which has totalled approximately $20 million since 1970. The foundation is a private, nonprofit charitable organization established under the will of the late **Charles E. Culpeper**, one of the early pioneers in the bottling and marketing of Coca-Cola. In recent years, the 50-year-old foundation has awarded more than $6 million annually to activities in health, science, technology, education, the arts and administration of justice.

Hortin was one of three researchers selected nationwide from among 50 applicants nominated by their respective institutions. The objective of the program is to support high achieving young physicians who are committed to careers in academic medicine.

■ **Susan Keithly** and **Brook Beall** are studying today to become the scientists of tomorrow. Though still in high school, the two are looking beyond college to prepare for the day when they hope to have the medical science skills necessary to perform delicate surgery or envision new treatment for rare diseases.

Under the tutelage of researchers at Washington University School of Medicine, the St. Louis high school seniors are honing a pre-existing interest in the sciences, specifically research and medicine. As two of the first National Kidney Foundation Science Scholars, Keithly, 16, and Beall, 17, will spend 10 weeks of their summer vacation working in laboratories at the School of Medicine. During their stint, they will oversee a research project and write a summary report describing the experience and knowledge gained.

The novel program is part of a nationwide effort by the Kidney Foundation to interest sharp young minds in the field of medical science. In all, four major university medical centers will sponsor eight students during the summer. At the conclusion of the program, one student out of the eight will be awarded a four-year, $10,000 per year scholarship to support study toward a degree related to science and/or medicine.

Keithly and Beall were selected from a pool of applicants taken from 10 high schools in the St. Louis area. Keithly attends Ursuline Academy and Beall attends John Burroughs. Each will receive a $2,500 stipend for participating in the summer research project.

Though a pilot project, **Saulo Klahr, M.D.**, president of the National Kidney Foundation and director of the renal division at the School of Medicine, says the Science Scholars Award Program was designed as an ongoing program and is scheduled to continue pending corporate sponsorship. Ford Motor Company, Dearborn, MI, is funding the program this year.

■ The Lipid Research Center Core Laboratory at Washington University School of Medicine in St. Louis has been awarded a $6 million contract by Bristol-Myers Squibb Company to assist with one of the largest drug development studies ever conducted by the company.

The six-year study, being administered by **Frank Sacks, M.D.**, and **Eugene Braunwald, M.D.**, of Brigham and Women's Hospital and Harvard Medical School, involves more than 50 clinical research centers throughout the United States and Canada.

The project, known as the Cholesterol and Recurrent Events (CARE) study, will help determine whether taking a cholesterol-lowering medication called Pravastatin will decrease the risk of death and recurrent myocardial infarction among patients who have already had an MI.

The Core Laboratory, directed by **Thomas Cole, Ph.D.**, has been designated as the cental laboratory for the study and will administer all clinical laboratory work associated with it, receiving all blood and urine samples from the participating research centers. The lab will analyze samples for lipids and lipoproteins and has a subcontract with Barnes Clinical Laboratories for other non-lipid related laboratory testing.

The CARE study will screen 4,500 potential subjects and enroll 3,500. So far, 39 U.S. centers and 13 Canadian centers participate.

■ Animal and human studies of neural tissue transplants for treatment of Parkinson's Disease were poorly conducted and controlled and failed to consider an alternate explanation for their perceived benefits, according to a review article by **William Landau, M.D.**, published in the May issue of *Neurology*. Dr. Landau heads the neurology department at Washington University School of Medicine.

Brain tissue transplant work began about 10 years ago in primates. Recently human trials have been conducted based on results from animal studies. Landau, however, says the flaws in these primate studies are manifold. He says there is no evidence to prove that either clinical or experimental parkinsonism in primates is specifically cured by transplantation of tissue into the brain.

■ A $250,000 grant to Washington University from McDonnell Douglas employees has launched the development of a method to detect acquired immunodeficiency syndrome (AIDS) in newborn children. It is the only research of its kind in the nation.

Currently, the human immunodeficiency virus (HIV), which causes AIDS, cannot be detected in children until they are about eight months old.

The five-year grant will enable researchers at the University's School of Medicine to study how HIV reproduces and better predict the rate at which the disease progresses in newborns.

Max Arens, Ph.D., research assistant professor in the department of pediatrics, and **Lee Ratner, M.D., Ph.D.**, assistant professor in the departments of medicine and molecular microbiology, will supervise the research. Their work will use a newly developed technique, the polymerase chain reaction, to stage the extent of HIV infection among white blood cells. The basic purpose of the research is to be able to more quickly and accurately diagnose HIV-infection in newborns and children. Because AIDS devastates children more quickly than it does adults, it is critical that the appropriate treatment begin as soon as possible, according to Arens.

AIDS is a fatal condition that impairs the body's natural ability to fight disease. More than 110,000 cases of AIDS have been reported in the United States, with 1,700 in children under the age of 13. Of the infants born to HIV-infected mothers, it is estimated that about one-third will become infected.

What's more, the incidence of AIDS in children is on the rise. In some northeastern hospitals, up to 5% of the women delivering infants are infected with HIV. In St. Louis, where AIDS has spread more slowly, the number of children born infected with HIV is expected to triple this year to 18.

■ Researchers at Washington University School of Medicine in St. Louis are seeking volunteers to test a new drug for people who have diabetes and elevated triglyceride levels.

The study, headed by **Richard E. Ostlund, Jr., M.D.**, associate professor of medicine, will investigate the drug gemfibrozil to determine its effect on controlling triglyceride and cholesterol levels in patients with noninsulin-dependent diabetes mellitus.

To qualify, volunteers need to be 35 years of age or older with noninsulin-dependent (type II) diabetes, have elevated triglyceride levels and be willing to follow the American Diabetes Association diet.

Selected participants will enter an eight-week baseline period where they will have their blood analyzed before and after a prescription to follow the American Diabetes Association diet. Qualifying patients will then either receive genfibrozil or a placebo for 20 weeks, while continuing to follow the diet and routine diabetes management. Assessments for safety, lipid levels and glycemic control will be carried out at specified intervals.

Participants chosen for the study will receive free physical exams, consultation with registered dietitians and information on how to manage diabetes.

For more information about participation in the study, **call Carolyn Fritschle, 314/362-8298.**

■ Washington University School of Medicine is looking for male volunteers age 65 and older to participate in a study examining the effects of weight-training on muscle mass.

Over the next five years, 100 volunteers will be needed to carry out the ongoing project, which is being funded with a $290,000 grant from the National Institute on Aging, an agency of the National Institutes of Health.

Kevin Yarasheski, Ph.D., research instructor in medicine, is conducting the project and says its purpose is to demonstrate that elderly men can adapt to weight-training exercise by increasing their muscle mass, and as a result, gain muscular strength that can be used to assist them in performing routine tasks that may have become difficult with age.

Persons who live in the St. Louis area, are 65 to 75 years of age and in overal good health, are invited to call Jil Campbell at 314/362-2396 about becoming a volunteer in the weight lifting program.

MSMA 133rd
Annual Convention
April 3-7, 1990
Crown Center
Kansas City

University of Missouri-Kansas CIty

■ The UMKC School of Medicine has been named a model education program for the third consecutive year by the National Fund for Medical Education.

Through its Incentive Grant Program, the NFME sends medical faculty from schools throughout the country to visit and investigate one of six designated model education programs. Medical educators who select UMKC may attend a three-day workshop on the integrated curriculum under the docent system, or two-day workshops on the Quarterly Profile Examination system or the admissions process that identifies gifted high school graduates for the study of medicine. Because these innovative aspects of the medical school appear to be transferable to other schools and address national interests, they are appropriate models.

■ UMKC Medical School's first dean, **Richardson K. Noback, M.D.**, retired after 20 years of service to the school. Dr. Noback became director of Kansas City's General Hospital (now the school's affiliated hospital, Truman Medical Center) in 1964. In 1970, he became the founding dean of the medical school and served in that capacity for eight years. Since 1978, he has been a docent and a professor of medicine. Dr. Noback was honored July 6 with a retirement reception at the school and a dinner at the Savoy Grill in Kansas City. Medical school personnel, university officials, and former associates of Dr. Noback attended the events to pay tribute to the founding dean and his wife, Nan, who has been a key auxiliary volunteer at Truman Medical Center.

■ **Louise Arnold, Ph.D.**, professor and director of the Office of Medical Education and Research, has been elected to the executive committee of the national Society of Directors of Research in Medical Education.

Dr. Arnold, a charter member of the society, will serve a three-year term on the six-member executive committee. The society, formed in 1987, is dedicated to enhancing the quality of education in medical schools. Membership is limited to the director of a unit, department or office of educational research in a medical school or health science setting.

■ **Hans W. Uffelmann, Ph.D.**, professor of philosophy and medicine, received a Burlington Northern Foundation Achievement Award for exemplary faculty achievement. Dr. Uffelmann received a certificate and $4,000 at a University of Missouri Board of Curators meeting.

■ **Mark A. Mitchell, M.D., M.P.H.**, a 1981 graduate of the medical school, has received the school's 1990 Take Wing Award. The award is given annually in recognition of a recent alumni. Dr. Mitchell is deputy director of the Kansas City Health Department. He was recognized for establishing a reputable sickle cell program, the city's first, and seeking passage of a law that banned smoking in the city's public areas.

■ **David Bamberger, M.D.**, and **James Stanford, M.D.**, assistant professors of medicine, and **Mala Gupta, M.D.**, assistant clinical professor of medicine, were conference faculty and planning committee members for a national conference, "HIV Update for Physicians," held in June at the Westin Crown Center, Kansas City. Dr. Bamberger detailed the history and characteristics of the human immunodeficiency virus (HIV). Dr. Stanford discussed transmission of HIV and noted the risk to healthcare professionals who use needles. Dr. Gupta spoke on office management of HIV.

■ The School of Medicine and St. Luke's Hospital sponsored the second annual Weekend Lipid Conference July 27 and 28 at Westin Crown Center, Kansas City. **William L. Isley, M.D.**, associate professor of medicine, was course director of the conference. He conducted sessions on lipid lowering and the treatment of dyslipidemias. **Leland Graves, III, M.D.**, assistant professor of medicine, conducted a session on dyslipidemias in the diabetic patient.

The keynote speaker was **B. Greg Brown, M.D., Ph.D.**, professor of medicine at the University of Washington School of Medicine, Seattle. Dr. Brown, who is an expert in regression and progression of coronary atherosclerosis, spoke on the effectiveness of three lipid lowering strategies.

■ The School of Medicine is assisting the Kansas City, Missouri School District in establishing the district's first health professions magnet. The program will begin this fall at Southeast High School.

The medical school will host tours and field trips and provide guest speakers and lecturers for science and health activities and courses. Many other possible exchange activities are being considered.

The planning committee includes **James Mongan, M.D.**, Dean of the School of Medicine; **Louise Arnold, Ph.D.**, professor and director of the Office of Medical Education and Research; **Reaner Shannon, Ph.D.**, associate professor and chairman of the Minority Recruitment and Retention Committee; and **Francoise King**, learning resources specialist.

■ **Cindy D. Kilburn**, a Year-6 student, is one of 27 recipients of the MAP/Reader's Digest International Fellowship. In July she traveled to Vozandes Shell Hospital in Ecuador where she will serve for eight weeks. Kilburn also was awarded one of seven Harry S. Truman Good Neighbor Award Foundation scholarships for international studies. The Foundation awards $1,000 scholarships to students who are in disciplines with an emphasis on conflict resolution and who exemplify the ideals Truman upheld.

University of Missouri-Columbia

■ **Jack J. Curtis, M.D.**, professor and chief of the division of cardiothoracic surgery, recently addressed two national conferences. Dr. Curtis made a presentation to the American Academy of Thoracic Surgery in Toronto, Canada and also spoke at the 39th Annual Scientific Session of the American College of Cardiology in New Orleans, LA.

■ **Joseph T. Walls, M.D.**, associate professor in the division of cardiothoracic surgery, recently presented a talk at the 47th annual meeting of the Central Surgical Association in Chicago.

■ **Stephen Hazelrigg, M.D.**, resident physician in the division of cardiothoracic surgery, gave a presentation to the American Academy of Thoracic Surgery in Toronto, Canada, on the effect of muscle sparing as opposed to standard postlateral thoractomy.

■ **Rodney Landreneau, M.D.**, assistant professor in the division of cardiothoracic surgery, made a presentation recently at the 10th Annual Meeting of the American Society for Laser Medicine and Surgery in Nashville, TN.

■ Internationally respected cardiologist **Karl T. Weber, M.D.**, assumed duties recently as MU's new director of cardiology, announced **Michael C. Perry, M.D.**, chairman of the department of medicine.

Karl T. Weber, M.D.

Weber comes to MU from the University of Chicago, where he was professor of medicine since 1983. He also served as director of the division of cardiology and the Cardiovascular Institute at Michael Reese Hospital and Medical Center in Chicago.

Weber's immediate goal is to establish a heart failure program similar to ones he developed in Chicago and at the University of Pennsylvania in Philadelphia. In Chicago, he conducted research under a $12 million grant program with funding from the National Institutes of Health, American Heart Association and pharmaceutical industry. In his move to Missouri, Weber brought along four team members as new faculty for the division.

■ **Karl D. Nolph, M.D.**, professor and director of nephrology, was elected to a three-year term as president of the International Society for Peritoneal Dialysis July 23 in Kyoto, Japan, at the organization's fifth congress. Nolph, known for his work in renal replacement therapy, will have a major role in organizing the next international congress to be held in Thessaloniki, Greece, in 1992.

■ Two School of Medicine summer programs for minority students boasted record interest and enrollments this year. Fourteen Missouri area youth took part in the Minority High School Research Apprentice Program, and eight undergraduates representing universities across the country participated in the Premedical Sciences Enrichment Program. The programs, which last six weeks, give students an early introduction to medical school. Paired with minority resident physicians and scientists, participants take specially designed classes, work in a laboratory and conduct research.

■ **Philip Anderson, M.D.**, professor and director of the division of dermatology, recently addressed the American Academy of Dermatology's long-range planning meeting in Boston. He also spoke at the Louisiana Dermatological Society's annual meeting on July 18 in New Orleans.

■ **Jeffrey A. Bredemann, M.D.**, resident physician in the department of anesthesiology, was awarded first place for his poster presentation of a case report titled, "Treatment of Refractory Seizures in Massive Isoniazid Overdose." He made the presentation at the Midwest Anesthesia Conference in Chicago.

■ **David Clark, M.D.**, assistant professor of dermatology, addressed the American Academy of Dermatology's Summer Session in Boston on "Worrisome Lesions of the Gums, Teeth and Mouth."

■ **Jack Curtis, M.D.**, professor and chief of cardiothoracic surgery, was elected president of the Missouri Chapter of the American College of Surgeons at the group's 23rd annual professional meeting in June.

Joel A. DeLisa, M.D., professor and chairman of physical medicine and rehabilitation at the University of Medicine and Dentistry of New Jersey, delivered the 1990 Rusk Lecture on August 24.

MU's department of physical medicine and rehabilitation recently honored **Jem Hoff, M.D.**, with its Chief Resident Award at the annual Rusk celebration. **Robert R. Conway, M.D.**, assistant professor, was presented with the Teacher of the Year Award.

David Elias, M.D., has been appointed assistant professor of clinical medicine in the division of general internal medicine. He comes to MU from the University of Tennessee in Memphis.

Robert G. Frank, Ph.D., interim chairman of physical medicine and rehabilitation, served as moderator for the recent fifth annual Missouri Head Injury Advisory Council Conference in Jefferson City. The conference's purpose was to assemble state and national experts to discuss rehabilitation, funding, community programs and family. It also provides a forum to coordinate programs providing services to Missourians with head injuries and enhances professional expertise. The keynote speaker was **Marc W. Haut, Ph.D.**, assistant professor of behavioral medicine and psychiatry at West Virginia University. He completed an internship and postdoctoral fellowship at MU.

Robert McMurray, M.D., of the division of rheumatology, recently received the Outstanding Fellow Award from the department of medicine. McMurray was the lead author of a presentation on bromocriptine at the Central Regional meeting of the American College of Rheumatology.

Jerry Obritsch, M.D., resident physician, and **Michael Cardwell, M.D.**, assistant professor of obstetrics and gynecology, had an abstract titled, "Amniotic Ban Syndrome," accepted for the Southern Medical Association annual meeting October 15-17 in Nashville, TN.

Zbylut J. Twardowski, M.D., professor of nephrology, recently addressed several regional conferences in the United States and Canada. He spoke to the Colorado Society of Nephrology and the Tri-State Renal Network in Indianapolis and gave four presentations at the first Western Canada Conference on Peritoneal Dialysis in Edmonton, Alberta.

Two new faculty have joined the department of obstetrics and gynecology. **Mary Beth Benton, M.D.**, is an assistant professor of clinical OB/GYN. She both earned her medical degree and completed a residency at MU. **Kathy Sharpe, Ph.D.**, is an assistant professor in the area of embryology, focusing her work within the Center for Fertility and Cryobiology. She comes to MU from the University of Kentucky, where she completed a postdoctoral fellowship. Sharpe earned her doctorate in pathophysiology at the University of Tennessee.

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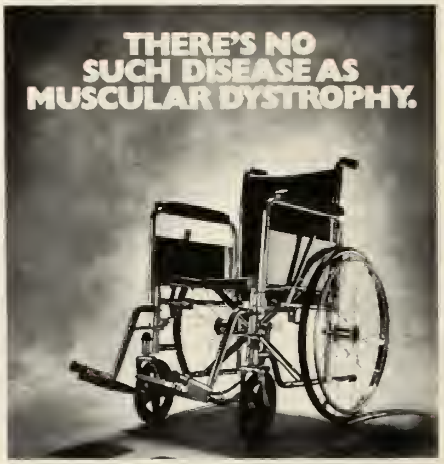

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Jerry Lewis, National Chairman

New Members

■ **Robert B. Belshe, M.D.**, 1402 S. Grand Blvd., St. Louis 63104, has become a member of the Missouri State Medical Association. Dr. Belshe received his preliminary education at the College of William & Mary and obtained his medical degree at the University of Illinois in 1973. He completed his residency at the National Institutes of Health, NIAID, Bethesda, MD. Dr. Belshe specializes in infectious disease.

■ **Robert E. Benedett, M.D.**, 1965 S. Fremont, Suite 2000, Springfield 65804, has become a member of the Greene County Medical Society. Dr. Benedett received his preliminary education at Augustina College and obtained his medical degree at the Washington University School of Medicine in 1983. He completed his residency at Washington University, St. Louis, MO. Dr. Benedett specializes in ophthalmology.

■ **Mary Beth Benton, M.D.**, N602 University Hospital, OB/GYN Dept., 1 Hospital Drive, Columbia 65212, has become a member of the Boone County Medical Society. Dr. Benton received her preliminary education at Central Missouri State University and the University of Missouri-Columbia and obtained her medical degree at the MU School of Medicine in 1986. She completed her residency at the University of Missouri Hospital and Clinics, Columbia, MO. Dr. Benton specializes in obstetrics/gynecology.

■ **Charles W. Burris, D.O.**, 13610 Barrett Office Drive, Suite 105, St. Louis 63021, has become a member of the St. Louis Metropolitan Medical Society. Dr. Burris obtained his osteopathic degree at the Kirksville College of Osteopathic Medicine & Surgery in 1967. He completed his residency at Lakeside Hospital, Kansas City, MO. Dr. Burris specializes in anesthesiology.

■ **Rafael Calabria, M.D.**, Heartland Hospital, Nevada 64772, has become a member of the West Central County Medical Society. Dr. Calabria received his preliminary education at the University of Puerto Rico and obtained his medical degree at the University of Puerto Rico School of Medicine in 1964. He completed his residency at the Johns Hopkins Hospital, Baltimore, MD. Dr. Calabria specializes in psychiatry.

■ **Steven G. Cohn, M.D.**, 1000 E. 50, #340, Anesthesiology Service, Inc., Kansas City 64110, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Cohn received his preliminary education at the University of Missouri-Columbia and obtained his medical degree at the University of Kansas School of Medicine in 1967. He completed his residency at the University of Kansas Hospitals, Kansas City, KS. Dr. Cohn specializes in anesthesiology.

■ **Kenneth C. Cummings, M.D.**, Medical Staff Services Office, 1000 Carondelet Dr., Kansas City 64114, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Cummings received his preliminary education at George Washington University and obtained his medical degree at the George Washington University School of Medicine in 1969. He completed his residency at Letterman Army Medical Center, San Francisco, CA. Dr. Cummings specializes in pathology and medical management.

■ **Ronald L. Ellis, M.D.**, 3660 S. National, #350, Springfield 65807, has become a member of the Greene County Medical Society. Dr. Ellis received his preliminary education at Louisiana Tech University and obtained his medical degree at the Louisiana State University School of Medicine in 1980. He completed his residency at the University of Texas Medical Branch, Galveston, TX. Dr. Ellis specializes in anesthesiology.

■ **Michael W. Good, M.D.**, 2619 N. Kansas, Springfield 65804, has become a member of the Greene County Medical Society. Dr. Good received his preliminary education at Kansas State University and obtained his medical degree at the University of Kansas School of Medicine in 1978. He completed his residency at Wesley Medical Center, Wichita, KS. Dr. Good specializes in family practice.

■ **Marshall E. Hicks, M.D.**, 510 S. Kingshighway Blvd., St. Louis 63110, has become a member of the Missouri State Medical Association. Dr. Hicks received his preliminary education at the University of Louisville and obtained his medical degree at the University of Kentucky School of Medicine in 1982. He completed his residency at Indiana University, Indianapolis, IN. Dr. Hicks specializes in interventional radiology.

■ **Pamela J. Honeycutt, M.D.**, Hematology-Oncology Associates of Columbia, 3401 Berrywood Dr., Suite 303, Columbia 65201, has become a member of the Boone County Medical Society. Dr. Honeycutt received her preliminary education at the University of Mississippi and obtained her medical degree at the Duke University School of Medicine in 1981. She completed her residency at Children's Hospital of San Francisco, San Francisco, CA. Dr. Honeycutt specializes in internal medicine.

■ **S. Brian Kim, M.D.**, 1001 East Primrose, Springfield 65807, has become a member of the Greene County Medical Society. Dr. Kim received his preliminary education at the College of Liberal Arts and Sciences, Seoul, Korea and obtained his medical degree at Seoul National University in 1978. He completed his residency at St. Joseph Mercy Hospital, Pontiac, MI. Dr. Kim specializes in internal medicine.

■ **Robert C. Kimbrough, III, M.D.**, 1001 E. Primrose, Springfield 65807, has become a member of the Greene County Medical Society. Dr. Kimbrough received his preliminary education at Kansas University and obtained his medical degree at the Kansas University School of Medicine in 1969. He completed his residency at Baylor College of Medicine, Houston, TX. Dr. Kimbrough specializes in infectious disease.

■ **Charles C. Mauldin, M.D.,** 1000 E. Primrose, Suite 310, Springfield 65807, has become a member of the Greene County Medical Society. Dr. Mauldin received his preliminary education at the University of Southern Mississippi and obtained his medical degree at the University of Mississippi School of Medicine in 1975. He completed his residency at the Medical College of Wisconsin Affiliated Hospitals, Milwaukee, WI. Dr. Mauldin specializes in physical medicine and rehabilitation.

■ **Robin C. Miller, D.O.,** 13610 Barrett Office Dr., Suite 105, Ballwin 63021, has become a member of the St. Louis Metropolitan Medical Society. Dr. Miller obtained her osteopathic degree at the Kirksville College of Osteopathic Medicine in 1982. She completed her residency at Warren General Hospital, Warren, OH. Dr. Miller specializes in anesthesiology.

■ **Louis E. Mire, M.D.,** 1235 E. Cherokee, Springfield 65804, has become a member of the Greene County Medical Society. Dr. Mire received his preliminary education at Southeastern Louisiana University and obtained his medical degree at the Louisiana State University Medical School in 1973. He completed his residency at Charity Hospital, New Orleans, LA. Dr. Mire specializes in emergency medicine.

■ **Donald W. Myears, M.D.,** 3231 S. National, Springfield 65804, has become a member of the Greene County Medical Society. Dr. Myears received his preliminary education at the University of Missouri-Columbia and obtained his medical degree at the MU School of Medicine in 1982. He completed his residency at the University of Colorado Health Sciences Center, Denver, CO. Dr. Myears specializes in cardiology.

■ **Steven A. Nagel, M.D.,** 600 Emerson St., Suite 300, St. Louis 63141, has become a member of the St. Louis Metropolitan Medical Society. Dr. Nagel obtained his medical degree at the University of Illinois School of Medicine in 1972. He completed his residency at Memorial Hospital, Carbondale, IL. Dr. Nagel specializes in family practice.

■ **John R. Reisser, M.D.,** General and Vascular Surgery, Cape Girardeau 63701, has become a member of the Cape Girardeau County Medical Society. Dr. Reisser received his preliminary education at Memphis State University and obtained his medical degree at the University of Tennessee School of Medicine in 1984. He completed his residency at the University of Tennessee, Memphis, TN. Dr. Reisser specializes in general and vascular surgery.

■ **Agara S. Reddy, M.D.,** 500 Keene St., Suite 306, Columbia 65201, has become a member of the Boone County Medical Society. Dr. Reddy received his preliminary education at St. Joseph's College, India and obtained his medical degree at Bangalore Medical College in 1975. He completed his residency at Rush Presbyterian-St. Luke's Hospital, Chicago, IL. Dr. Reddy specializes in psychiatry.

■ **David L. Redfern, M.D.,** 1900 S. National, Suite 2960, Springfield 65804, has become a member of the Greene County Medical Society. Dr. Redfern received his preliminary education at Northeastern State University and obtained his medical degree at the University of Oklahoma Health Sciences Center in 1985. He completed his residency at the University of Oklahoma, Tulsa, OK. Dr. Redfern specializes in obstetrics/gynecology.

■ **Jackie Tenney, M.D.,** 4900 Swope Parkway, Kansas City 64130, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Tenney received her preliminary education at Michigan State University and obtained her medical degree at Case Western Reserve University in 1983. She completed her residency at Children's Hospital Medical Center of Akron, Akron, OH. Dr. Tenney specializes in pediatrics.

■ **V. Eric Thompson, M.D.,** Missouri Cardiovascular & Thoracic Surgeons, M.D., P.C., 1701 E. Broadway, Columbia 65201, has become a member of the Boone County Medical Society. Dr. Thompson received his preliminary education at Washington University and obtained his medical degree at the Washington University School of Medicine in 1982. He completed his residency at St. Luke's Hospital, Kansas City, MO. Dr. Thompson specializes in surgery.

■ **James L. Thompson, M.D.,** Pediatrics Associates, Cape Girardeau 63701, has become a member of the Cape Girardeau County Medical Society. Dr. Thompson received his preliminary education at Mid-America Nazarene College and obtained his medical degree at Kansas University School of Medicine in 1980. He completed his residency at Children's Mercy Hospital, Kansas City, MO. Dr. Thompson specializes in pediatrics.

■ **Thomas H. Wareing, M.D.,** 216 S. Kingshighway Blvd., St. Louis 63110, has become a member of the Missouri State Medical Association. Dr. Wareing received his preliminary education at Auburn University and obtained his medical degree at the University of Alabama School of Medicine in 1979. He completed his residency at Vanderbilt University, Nashville, TN. Dr. Wareing specializes in cardiothoracic surgery.

■ **Ivy M. Warsinski, M.D.,** 2344 Hampton Ave., St. Louis 63139, has become a member of the Missouri State Medical Association. Dr. Warsinski received her preliminary education at Western Michigan University and obtained her medical degree at Michigan State University College of Human Medicine in 1984. She completed her residency at Eastern Virginia School of Medicine, Norfolk, VA. Dr. Warsinski specializes in diagnostic radiology.

■ **Stephani A. Wehrman, M.D.,** Missouri Baptist Diagnostic Center, 3009 N. Ballas Rd., Suite 227, St. Louis 63131, has become a member of the St. Louis Metropolitan Medical Society.

Dr. Wehrman obtained her medical degree at the University of Missouri-Columbia in 1986. She completed her residency at Washington University School of Medicine, St. Louis, MO. Dr. Wehrman specializes in psychiatry.

■ **James C. West, Jr., M.D.**, Suite 240, Medical Plaza, 4320 Wornall Rd., Kansas City 64111, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. West received his preliminary education at Vanderbilt University and obtained his medical degree at the University of Tennessee in 1979. He completed his residency at Vanderbilt University, Nashville, TN. Dr. West specializes in urology.

■ **Vickie R. Wilson, M.D.**, 825 Euclid, Kansas City 64124, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Wilson received her preliminary education at the University of Missouri-Kansas City and obtained her medical degree at the UMKC School of Medicine in 1983. She completed her residency at LAC/USC General Hospital, Los Angeles, CA. Dr. Wilson specializes in internal medicine.

■ Resident Members

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In Memoriam

■ **Samuel P.W. Black, M.D.**, died June 9, 1990 at the age of 73. Dr. Black, a neurosurgeon, practiced medicine in Columbia for more than 30 years. He obtained his medical degree at the Johns Hopkins School of Medicine in 1943. After active duty in the Pacific in World War II, he returned to complete a residency at the Yale School of Medicine. In 1955, he became one of the founding faculty members of the fledgling University of Missouri Medical School. He served as a professor of neurosurgery at MU from 1955 until his retirement in 1982. He was named professor emeritus and continued to perform research and writing. Dr. Black was a member of the Boone County Medical Society.

■ **Edward M. Cannon, M.D.**, died May 6, 1990 at the age of 76. Dr. Cannon, a urologist, practiced medicine in the St. Louis area for more than 40 years. He served as president of the Deaconess Hospital medical staff from 1956-57. He also served as head of the urology department at the old City Hospital in St. Louis. He obtained his medical degree at the University of Nebraska School of Medicine in 1939. Dr. Cannon was a member of the St. Louis Metropolitan Medical Society.

■ **John M. Collins, M.D.**, died May 8, 1990 at the age of 81. Dr. Collins, a general practitioner, practiced medicine in St. Louis. He obtained his medical degree at the St. Louis University School of Medicine in 1934. Dr. Collins was a member of the St. Louis Metropolitan Medical Society.

■ **Robert Deitchman, M.D.**, died May 25, 1990 at the age of 70. Dr. Deitchman, a psychiatrist, practiced medicine in St. Louis for more than 35 years. Since 1980, he served as medical director of DART, an alcohol and drug abuse treatment program in St. Louis and as medical director of Hawthorn Children's Psychiatric Hospital. He was a clinical instructor of psychiatry at Barnes and an associate clinical professor of psychiatry at Washington University School of Medicine. He obtained his medical degree at the University of Virginia Medical School in 1953. Dr. Deitchman was a member of the St. Louis Metropolitan Medical Society.

■ **Norman W. Drey, Sr., M.D.**, died May 6, 1990 at the age of 78. Dr. Drey, an internal medicine specialist, practiced medicine in St. Louis for 47 years before retiring in 1987. He served on the staff of Jewish Hospital and was a professor emeritus at Washington University School of Medicine. In the 1950s, Dr. Drey invented the process known as Dreypak, a diabetes detection kit which made mass screening of the disease possible. He obtained his medical degree at the Washington University School of Medicine in 1936. Dr. Drey was a member of the St. Louis Metropolitan Medical Society.

■ **Frederick A. Jacobs, Sr., M.D.**, died May 27, 1990 at the age of 84. Dr. Jacobs, a pediatrician, practiced medicine in St. Louis for 44 years, before retiring in 1976. He served as pediatrician for the St. Louis Children's Aid Society from 1934-1945 and as a physician with the U.S. Medical Reserve Corps from 1928-1941. He obtained his medical degree at the Washington University School of Medicine in 1928. Dr. Jacobs was a member of the St. Louis Metropolitan Medical Society.

■ **Donald E. Kilker, M.D.**, died May 27, 1990 at the age of 70. Dr. Kilker, a general practitioner, practiced medicine in the St. Louis area for 45 years before recently retiring. He served on the staffs of Missouri Baptist Hospital, where he was chief of general practice for 25 years, Christian Hospitals Northeast and Northwest, and DePaul Health Center. He obtained his medical degree at the Washington University School of Medicine in 1945. Dr. Kilker was a member of the St. Louis Metropolitan Medical Society.

■ **James F. Nickel, M.D.**, died May 13, 1990 at the age of 68. Dr. Nickel, an internist, practiced medicine in the St. Louis area for more than 38 years. He was on the staff of St. John's, St. Luke's and Barnes hospitals. He also served as associate professor of clinical medicine at the Washington University School of Medicine. He obtained his medical degree at the Washington University School of Medicine in 1948. Dr. Nickel was a member of the St. Louis Metropolitan Medical Society.

■ **William D. Perry, M.D.**, died May 23, 1990 at the age of 67. Dr. Perry, an internist, practiced medicine in St. Louis for almost 30 years. He served as chairman of the state Board of Healing Arts from 1960-1964 and was also president of the Barnes Hospital Allied Staff in 1964. He served as an associate professor of clinical medicine at the Washington University School of Medicine and served in the Air Force in the 1950s. He obtained his medical degree at the Washington University School of Medicine in 1947. Dr. Perry was a member of the St. Louis Metropolitan Medical Society.

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References

1. *USP DI Update, September/October 1988, p 120.*
2. *Br J Clin Pharmacol 1985;20:710-713.*
3. *Data on file, Lilly Research Laboratories.*
4. *Scand J Gastroenterol 1987;22(suppl 136):61-70.*
5. *Am J Gastroenterol 1989;84:769-774.*

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Carcinogenesis, Mutagenesis, Impairment of Fertility—A two-year oral carcinogenicity study in rats with doses as high as 500 mg/kg/day (about 80 times the recommended daily therapeutic dose) showed no evidence of a carcinogenic effect. There was a dose-related increase in the density of enterochromaffin-like (ECL) cells in the gastric oxyntic mucosa. In a two-year study in mice, there was no evidence of a carcinogenic effect in male mice, although hyperplastic nodules of the liver were increased in the high-dose males as compared with placebo. Female mice given the high dose of Axid (2,000 mg/kg/day, about 330 times the human dose) showed marginally statistically significant increases in hepatic carcinoma and hepatic nodular hyperplasia with no numerical increase seen in any of the other dose groups. The rate of hepatic carcinoma in the high-dose animals was within the historical control limits seen for the strain of mice used. The female mice were given a dose larger than the maximum tolerated dose, as indicated by excessive (30%) weight decrement as compared with concurrent controls and evidence of mild liver injury (transaminase elevations). The occurrence of a marginal finding at high dose only in animals given an excessive and somewhat hepatotoxic dose, with no evidence of a carcinogenic effect in rats, male mice, and female mice (given up to 360 mg/kg/day, about 60 times the human dose), and a negative mutagenicity battery are not considered evidence of a carcinogenic potential for Axid.

Axid* (nizatidine, Lilly)

Axid was not mutagenic in a battery of tests performed to evaluate its potential genetic toxicity, including bacterial mutation tests, unscheduled DNA synthesis, sister chromatid exchange, mouse lymphoma assay, chromosome aberration tests, and a micronucleus test.

In a two-generation, perinatal and postnatal fertility study in rats, doses of nizatidine up to 650 mg/kg/day produced no adverse effects on the reproductive performance of parental animals or their progeny.

Pregnancy—Teratogenic Effects—Pregnancy Category C—Oral reproduction studies in rats at doses up to 300 times the human dose and in Dutch Belted rabbits at doses up to 55 times the human dose revealed no evidence of impaired fertility or teratogenic effect; but, at a dose equivalent to 300 times the human dose, treated rabbits had abortions, decreased number of live fetuses, and depressed fetal weights. On intravenous administration to pregnant New Zealand White rabbits, nizatidine at 20 mg/kg produced cardiac enlargement, coarctation of the aortic arch, and cutaneous edema in one fetus, and at 50 mg/kg, it produced ventricular anomaly, distended abdomen, spina bifida, hydrocephaly, and enlarged heart in one fetus. There are, however, no adequate and well-controlled studies in pregnant women. It is also not known whether nizatidine can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. Nizatidine should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers—Studies in lactating women have shown that 0.1% of an oral dose is secreted in human milk in proportion to plasma concentrations. Because of growth depression in pups reared by treated lactating rats, a decision should be made whether to discontinue nursing or the drug, taking into account the importance of the drug to the mother.

Pediatric Use—Safety and effectiveness in children have not been established.

Use in Elderly Patients—Healing rates in elderly patients were similar to those in younger age groups as were the rates of adverse events and laboratory test abnormalities. Age alone may not be an important factor in the disposition of nizatidine. Elderly patients may have reduced renal function.

Adverse Reactions: Clinical trials of varying durations included almost 5,000 patients. Among the more common adverse events in domestic placebo-controlled trials of over 1,900 nizatidine patients and over 1,300 on placebo, sweating (1% vs 0.2%), urticaria (0.5% vs <0.01%), and somnolence (2.4% vs 1.3%) were significantly more common with nizatidine. It was not possible to determine whether a variety of less common events was due to the drug.

Axid* (nizatidine, Lilly)

Hepatic—Hepatocellular injury (elevated liver enzyme tests or alkaline phosphatase) possibly or probably related to nizatidine occurred in some patients. In some cases, there was marked elevation (>500 IU/L) in SGOT or SGPT and, in a single instance, SGPT was >2,000 IU/L. The incidence of elevated liver enzymes overall and elevations of up to three times the upper limit of normal, however, did not significantly differ from that in placebo patients. Hepatitis and jaundice have been reported. All abnormalities were reversible after discontinuation of Axid.

Cardiovascular—In clinical pharmacology studies, short episodes of asymptomatic ventricular tachycardia occurred in two individuals administered Axid and in three untreated subjects.

CNS—Rare cases of reversible mental confusion have been reported.

Endocrine—Clinical pharmacology studies and controlled clinical trials showed no evidence of antiandrogenic activity due to nizatidine. Impotence and decreased libido were reported with equal frequency by patients on nizatidine and those on placebo. Gynecomastia has been reported rarely.

Hematologic—Fatal thrombocytopenia was reported in a patient treated with nizatidine and another H_2-receptor antagonist. This patient had previously experienced thrombocytopenia while taking other drugs. Rare cases of thrombocytopenic purpura have been reported.

Integumental—Sweating and urticaria were reported significantly more frequently in nizatidine- than in placebo-treated patients. Rash and exfoliative dermatitis were also reported.

Hypersensitivity—As with other H_2-receptor antagonists, rare cases of anaphylaxis following nizatidine administration have been reported. Because cross-sensitivity among this class has been observed, H_2-receptor antagonists should not be administered to those with a history of hypersensitivity to these agents. Rare episodes of hypersensitivity reactions (eg, bronchospasm, laryngeal edema, rash, and eosinophilia) have been reported.

Other—Hyperuricemia unassociated with gout or nephrolithiasis was reported. Eosinophilia, fever, and nausea related to nizatidine have been reported.

Overdosage: Overdoses of Axid have been reported rarely. If overdosage occurs, activated charcoal, emesis, or lavage should be considered along with clinical monitoring and supportive therapy. Renal dialysis for four to six hours increased plasma clearance by approximately 84%.

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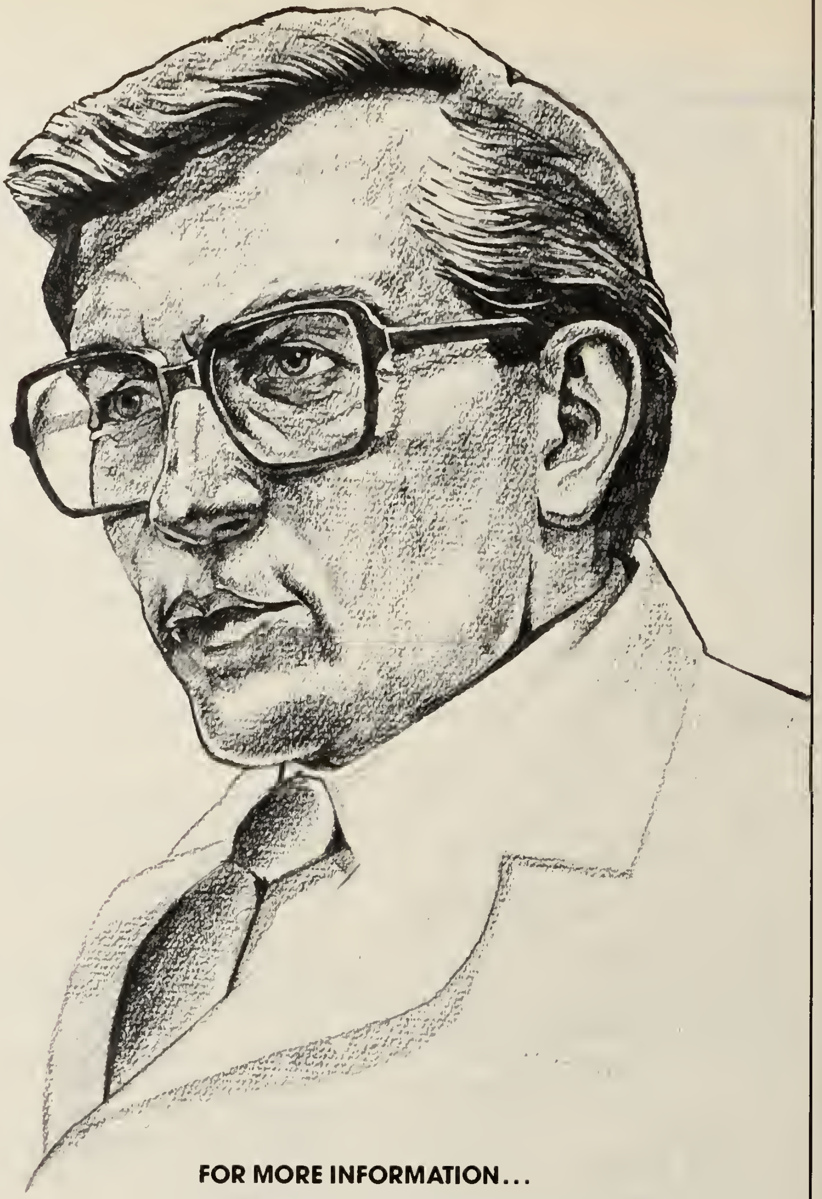

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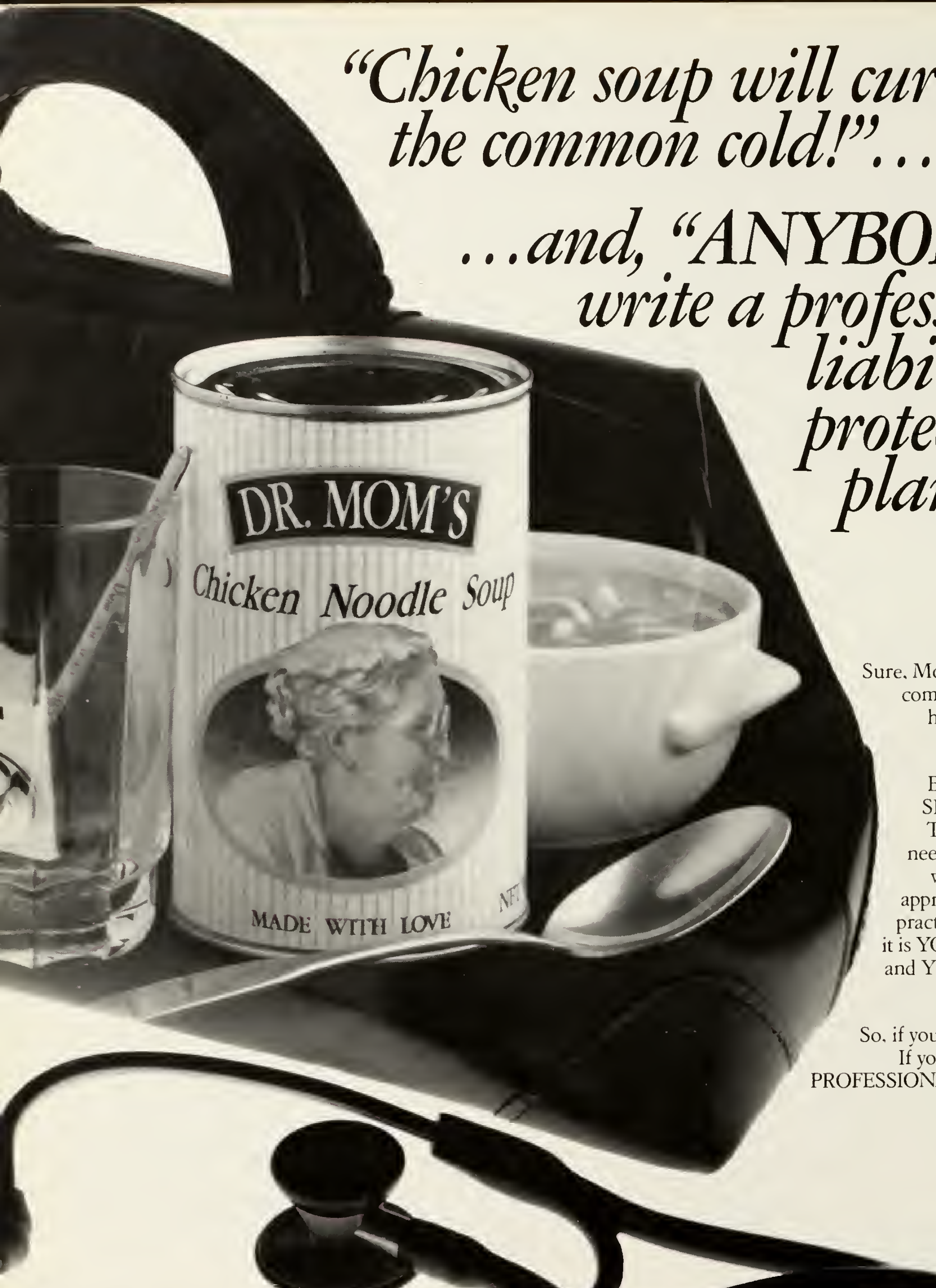

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"Mission at Carmel California," by **John W. Fries, M.D.**, of St. Louis, MO, is a classic watercolor painting featuring the flowers surrounding the historic Carmel Mission. Dr. Fries has contributed numerous original photos for the cover of the journal. Dr. Fries is a clinical professor of radiology at St. Louis University.

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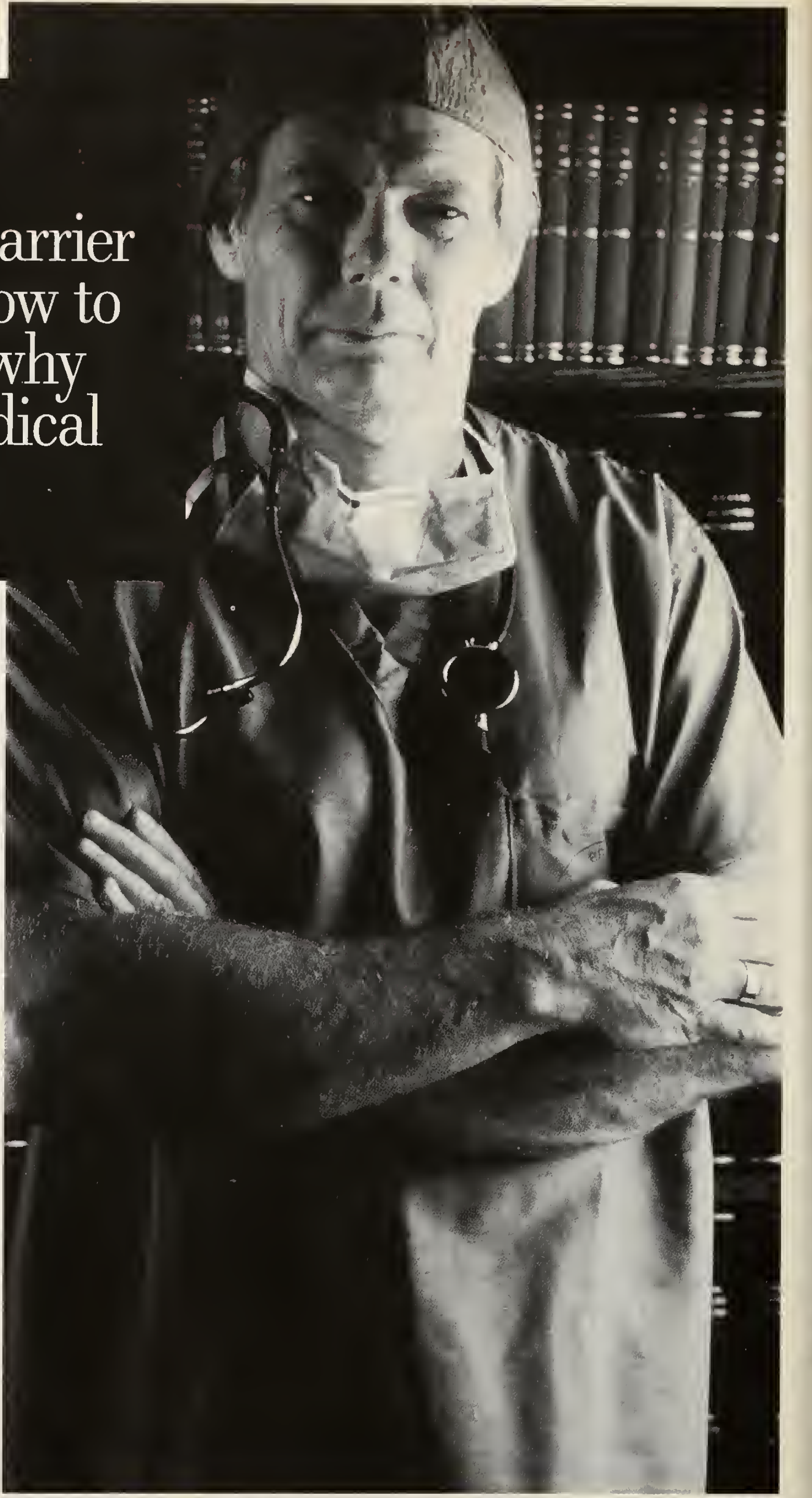

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GUEST EDITORIAL

Oral Contraceptives and Breast Cancer

by William H. Crosby, M.D.

*What we do **not** need is more and better analysis of a nonproblem. It is time to turn our attentions to more valid concerns.*

In this issue of *Missouri Medicine* is an excellent review of work to date on breast cancer and oral contraceptives (OC). While I admire the balance of the article, I quarrel with its final sentence: "We hope future well-designed studies will be able to resolve some of the issues." What we do *not* need is more and better analysis of a nonproblem. What the studies to date have demonstrated is this: The risk of OC-induced cancer is excruciatingly small, if it exists at all. Sluicing research funds into refinement of bean counts to achieve a final solution is the sort of exercise that diverts attention from problems that are of genuine, not just statistical, significance.

I am reminded of a fatuous proposal several years back to spend $130 million to learn if dietary fat is a risk factor in breast cancer. Studies were contradictory and inconclusive; committees were indecisive.[1] I don't know how the National Institutes of Health mustered the courage to squelch that one, but it was squelched. What use might the answers have been? Would women have changed what they eat? Do they slim down now knowing that obesity is truly a risk factor for early death?

Suppose more money and research were diverted into the question; would it convince anyone? Probably not the authors of reports on the losing side of the decision. What about young women who need OC? Millions of them seem driven more by gossip than by reason. Intimations of risk have already reduced the use of OC. A Gallup poll in 1985 revealed that 75% of American women believed that OCs carry substantial health risks. Nearly 35% believed that OCs cause cancer. More than 50% believed that OC use in young women has a higher mortality rate than childbirth. More than 35% believed that the OC failure rate is greater than 10%. Because of false information, OC use since 1975 has declined drastically. A steadily increasing percentage of American women have chosen less effective and less safe methods, or none at all.

We recognize many "proved" risk factors for breast cancer, including gender, age, nulliparity, X-rays. Many others have been examined and found "not guilty." Others, including OC and dietary fat, are so marginal that study after study has proved nothing.

Zeckhauser and Viscusi, in a recent article in *Science* stated that, "Advances in low-level risk detection threaten to engulf us with information. Regulators typically respond to each newly highlighted risk, whether painstakingly uncovered through scientific investigation or divulged with fanfare by the media, on an ad hoc basis. This response makes it hard to relate disparate risks to the overall risk level and impedes intelligent risk reduction, which must consider the costs and benefits involved. We need to acknowledge that risks to life and limb are inherent in modern society — indeed in life itself. Individuals should do more for themselves, paying greater attention, for example, to their diets and

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Guest Editorial

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driving habits. Governments should focus less on microscopic contingencies, and more on human mistakes and misdeeds, the source of far greater risks."[2]

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EDITOR'S DESK

by Donald G. Sessions, M.D.
Editor

Disappointment

He was always difficult to examine. It had been more than 12 years since he had first come to see me. He had been hoarse for several weeks and being a heavy smoker, was concerned about the possibility of cancer. I had not been able to see his vocal cords in the office. Clinical suspicion required a direct laryngoscopy under general anesthesia. He had a very early cancer of the vocal cord. I recommended radiation therapy. He accepted.

Following treatment, his voice cleared and the tumor disappeared. By now, I could see his vocal cords successfully with a mirror in the office *most* of the time. Because he was so hard to examine I asked him to come in at least three times a year for follow-up.

You get to know someone pretty well in 12 years. He loved to tell me about his work. He was in potatoes, and I learned a lot about spuds through the years. He was very close to his family. Together, he and I suffered through more than one catastrophe with his kids and grandkids. He was excited about his retirement and was surprised (I wasn't) when he seemed to be filling in at his old job more often than he thought he was going to once he had retired. Now he could "help out" for enjoyment and experience a sense of still being needed.

He was very close to his wife. I met her at his initial office visit but didn't see her again. About a year ago, she got a cancer that did not lend itself to successful treatment. There was major pain and suffering, and it was a blessing of sorts when she succumbed. He was obviously depressed. In addition, he became concerned about a new feeling in his throat. His voice continued to be normal, and my examination of his vocal cords was unchanged. Because the symptom continued, I ordered a barium swallow that read normal. I asked him to return for his routine visit.

About three months later, I was going through my mail when I saw the letter from a specialist in town. My patient had continued to have a funny feeling in his throat and had developed some difficulty swallowing associated with weight loss. The workup revealed a second primary tumor, and advanced obstructing cancer of the hypopharynx and upper esophagus. The upper limit of the tumor was at the level of the arytenoids. He was undergoing palliative radiation therapy at another hospital.

Disappointment only partially describes my emotional response to this turn of events. It was my worst nightmare. Had I missed the cancer? Had I done my best examination? Had I let my familiarity with this patient get in the way of performing a satisfactory workup? This disappointment can only be described as a feeling that somehow I had failed him as a patient, and as a friend.

As I look at my emotional reaction now, I can see other possible forces in action. Was there something more in this than disappointment in myself? Was I sad that he had not gotten back to me so that I could make the diagnosis? Was this about losing control of a patient? Was I just afraid that I missed something, and that I might be sued for negligence? Or was I having trouble recognizing

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Editor's Desk

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that I am just a human being somehow trying unsuccessfully to stem the tide of death?

It is difficult at times to observe the facticity of disease and death. Our story is that somehow it shouldn't be that way and when it is, we experience disappointment. In our emotional response to specific circumstances we forget how natural are the biologic cycles of life and death. Somehow, we say, with humans it should be different.

It is such a privilege to do what we do in our chosen profession. It is this realization that counterbalances the difficulties that we face daily in our practices. I am often in wonder when a patient's problems are resolved. I ask myself, what part did I play? Similarly, when a patient's problems don't get resolved, I ask myself the same question. At those times, I'm no different than the frustrated person who asks the rhetorical question — "In these days of modern technology, when we can send a man to the moon, why can't we cure cancer and heart disease?" In fact, in those illogical times of disappointment, frustration, anger, and sadness, I am the person posing that question. ■

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PRESIDENT'S PAGE

by Gary A. Dyer, M.D.
MSMA President

MSMA, to be effective in any arena, must have the consensus of the membership. The better the communication, the more fine-tuned the consensus.

Doctor, Are Your Communication Switches On?

As Chairman of the Council, President-Elect and now President of the MSMA, it has been my pleasure to travel across this great state and visit Missouri physicians. From Maryville to Kennett, from Joplin to Hannibal, component societies and their members have been most gracious hosts.

I have come to the conclusion that each physician, whether solo or in a group, is like a satellite in space. Communication with a satellite only takes place when the receiver switch is in the "on" position and the on-board computer is ready to receive. Communications from the satellite will travel to the earth only when the transmitter switch is in the "on" mode. In the same way, individual physicians must have receiver and transmitter switches in the "on" position and the on-board computer ready to communicate with MSMA and fellow physicians.

A significant number of physicians in our state have turned switches off completely. These physicians are obviously not the physicians reading this page. How do we reach them? How do we get more members to keep their receiver and transmitter switches turned on at all times? Why do we care if members are communicating?

MSMA, to be effective in any arena, must have the consensus of the membership. The better the communication and the greater the imput from all members, the more fine tuned the consensus is likely to be. For many of the physicians who are dead as far as communication is concerned, only one-on-one physician contact is likely to revive them. This contact is most appropriately a function of the component medical society. Councilors and Vice-Councilors in the 12 councilor districts can be called upon to assist when needed.

For those who are reading this page and have receiver switches on, the following 10 positive steps toward more effective communication are suggested:

1. Separate MSMA mailings from other incoming mail and read it first. Give the separation job to one office employee.
2. Read *MSMA Progress Notes* and *Missouri Medicine* monthly.
3. Call your Councilor or Vice-Councilor with ideas or problems.
4. Beef up your component medical society or section. Insist on regular meetings with a portion devoted to medical issues.
5. Ask your Councilor or Vice-Councilor to report to your society.
6. Become a Key Contact and receive the *Legislative Report*.
7. Write resolutions for the MSMA House of Delegates as issues arise instead of waiting until January. Send them to MSMA for final form and additional information.
8. Attend a reference committee at MSMA Annual Session. This year we meet in Kansas City at the Crown Center, April 3-7, 1991.
9. Read *AMA News* each week. You say you don't receive it? Join AMA and you will.
10. Support or help start a medical auxiliary.

For additional information on communication within MSMA see related article on page 743 of this issue of *Missouri Medicine.* ■

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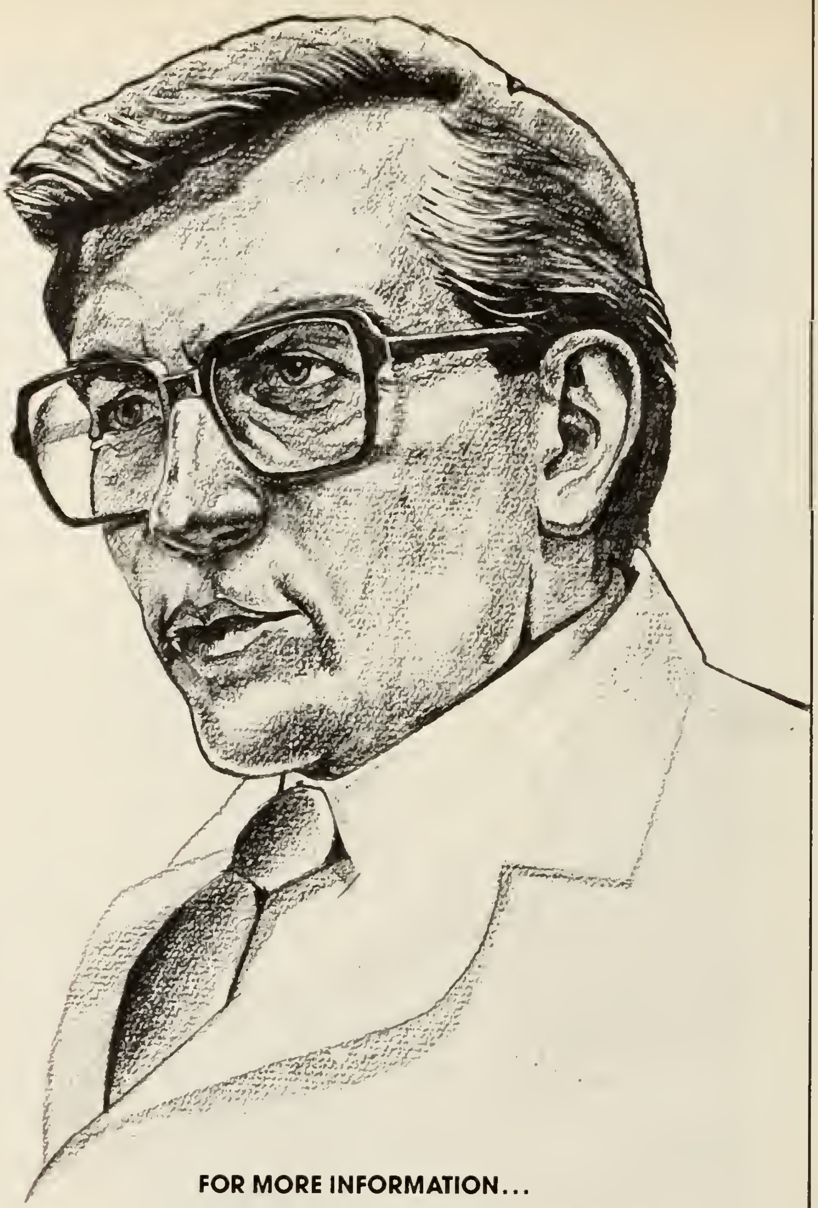

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AUXILIARY MESSAGE

by Nona Chapman
Health Projects Chairman

To face the future of medicine, this year's Auxiliary Health Projects Committee will focus on education

Health Projects

In facing the future of medicine together, the Missouri State Medical Association Auxiliary's Health Projects Committee will keep its focus on education. The AMA Auxiliary has outlined the following program which will, hopefully, be used in county auxiliaries across our state:

Healthier Lifestyles For Medical Families

In an effort to improve the health and quality of life of all people in this nation, we will encourage medical families to serve as good examples by exercising, eating sensibly and leading generally healthy lifestyles.

Fitness For Children

The AMA Auxiliary is adding another "Shape Up for Life" brochure. This one targets kindergartners through 3rd graders. Titled "Be a Winner, Shape Up for Life," it touches on such issues as exercising, eating sensibly, staying away from tobacco, alcohol and other drugs and making other positive lifestyle choices. Unlike the other brochures in this series, it is illustrated for coloring.

AMA/ABA Substance Abuse Prevention Program

The AMA recently requested the Auxiliary to assist in the implementation of the American Medical Association/American Bar Association Substance Abuse Prevention Program, which sends doctor/lawyer teaching teams into schools to talk with students about the medical and legal dangers of drug use and alcohol abuse. This program has been made available to each county society, and the auxiliaries stand informed and ready to assist.

Healthier Youth for the Year 2000

We will continue to participate in the AMA Adolescent Health Initiative, a comprehensive plan to combat many of the problems facing adolescents. This year's focus is on the "Healthier Youth for the Year 2000" program, which encourages the dissemination of more than 80 "Year 2000 National Health Objectives" targeted at the nation's youth. Auxilians are encouraged to participate by including the program's objectives in their newsletters and other communication devices and by continuing to develop programs and projects addressing the problems affecting youth.

AMA Youth HIV Education Project

Although Missouri is not one of the states directly involved in the AMA's "Youth HIV Education Project," we are asked to continue to develop HIV/AIDS education programs for the youth in our committees. The AMA Auxiliary's "Youth HIV/AIDS Education in the Schools: Guidelines for Auxiliary Participation," provides more information on how to participate in the project.

ACOG/AAFP Teen Pregnancy Prevention Public Service Campaign

For the third year now, the AMA Auxiliary is participating in the American College of Gynecolo-

continued on page 738

■ Auxiliary Message

continued from page 737

gists and the American Academy of Family Physicians' public awareness campaign to prevent teen pregnancies. This year's focus is on young men and women ages 14 to 22. Auxiliaries are asked to encourage local television stations to air the new public service announcement, "Teen Romance."

Project Bank

1990 marks the 15th birthday of the AMA Auxiliary's Project Bank. Here is found examples of programs successfully implemented by medical auxiliaries from all over the United States. These categorized projects include numbers of volunteers needed as well as the population of the community where the project was originally implemented. This year we encourage Missouri auxiliaries to contribute their projects to help celebrate the birthday.

As leaders in our country and with the support of our state and national organizations, we stand together supporting one another in our efforts to improve the health of our communities. Only together will we insure our future. ■

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PRACTICE MANAGEMENT

by Janice K. Woerth, Ph.D.

Do you have a question for Dr. Woerth? Include your questions along with your name, address and phone number and send them to:

Janice K. Woerth, Ph.D.
Practice Management
c/o *Missouri Medicine*
P.O. Box 1028
Jefferson City, MO 65102
Or call her direct:
816/587-1125

Although your name will not be used in the journal, please include your name and phone number so that Dr. Woerth may contact you if she needs additional information to answer your question.

Dear Dr. Woerth:

I keep reading about the importance of coding as it relates to reimbursement. In medical school, I never received coding training and, quite frankly, am unsure as to how much I need to know. What exactly should a physician know about coding and where can I obtain this information?

Dr. S.D.

Dear Dr. S.D.:

The physician's responsibility in coding is to provide his/her staff with a complete and specific patient diagnosis and a complete description of the services rendered to treat the diagnosis. The physician must be familiar with the level of specificity required to accurately code from the ICD-9-CM, the diagnostic codes, and from CPT, the procedural codes. It is generally not cost effective for a physician to do his/her own coding. Ideally, it is delegated to a well-trained staff member.

The specific diagnostic information necessary to code from ICD-9-CM, Volume 1 and 2, needs only to be recorded by the physician so the staff can select the appropriate code. The physician can learn the level of specificity required for diagnostic coding by reading through those sections of ICD-9-CM, Volume 1 from where his/her diagnostic codes are found. A word of warning, some sections of the book are more difficult to use than others and ICD-9-CM was not designed as a self-instructional text. I find that most physicians are best prepared for their role in diagnostic coding by attending a seminar or being trained by a coding consultant.

The procedural coding book, CPT, written by the AMA, is self-instructional but must be read thoroughly to avoid making coding errors. For Medicare and Medicaid, HCPCS Level 2 and 3 codes are required as supplement to CPT codes. Most physicians find that even though procedural coding is self-instructional, it is most effectively and efficiently learned via seminars.

Because of the legal requirement for coding on Medicare/Medicaid claims, I find that more medical school departments are starting to provide residents with some basic coding information. There are very few medical seminar companies that teach physicians their role in coding. In fact, there are only a handful of consultants, like myself, who provide seminars on the physicians role in coding. Most physician coding seminars are the result of requests made by physicians to their local and state medical societies and/or hospital administrator. Perhaps with increased requests from physicians for coding information, more courses will soon be available for the practicing physicians.

Dear Dr. Woerth:

How do I code for the critical care and operative standby?

Dr. R.N.

Dear Dr. R.N.:

There are codes in the CPT for coding critical care and operative standby. These codes are 99160 and 99162 for initial critical care and codes 99171-99174 for subsequent, follow-up critical care. Please notice that the codes for initial critical care are paid by the hour (99160) and half-hour (99162). The codes for subsequent, follow-up critical care represent four levels of service. The definition for levels of service are found in the Introduction section of CPT on pages xx-xxiii of the 1990 edition.

For operative standby, use codes 99150 and 99151. Code 99150 is for the first 30 to 60 minutes. Code 99151 is for operative standby more than one hour.

■

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For Your Information:

Head Injury

Head injury causes more deaths and disabilities than any other neurologic cause in individuals under age 50. Skull fractures can tear the arteries and veins that supply the meninges (the protective membrane covering the brain), causing hemorrhage or intracranial pressure from the rapidly expanding mass of clotted blood. Meningitis-causing bacteria can be introduced via the small openings caused by skull fracture. Even closed head injuries (head injuries that do not result in displaced skull fractures) can cause bruising and tearing of brain tissue. In the medical management of patients with head injuries, family and friends can play a key role in post-treatment observation.

Development of Closed Head Injuries

Although we tend to think of the brain as a fairly solid object that completely fills the inside of the skull, in reality it is a very soft, almost jelly-like organ that is insulated and bathed by spinal fluid — sort of like a pickle in a custom-fit pickle jar. If one were to shake the pickle jar, the pickle inside would bump back and forth against the sides of the jar. In a similar fashion, when a blow occurs to the head, the force of that blow is transferred through the spinal fluid into the brain, causing a concussion and/or contusion.

A concussion refers to the brief loss of consciousness following a head injury. It causes no detectible physical injury upon examination or X-ray. A contusion refers to the bruising or tearing of brain tissue following injury. This causes neurological signs such as difficulty moving a limb or limb weakness. Contusions also cause detectible blood in the spinal fluid. It is important to keep in mind that head injury often results from rapid acceleration or deceleration of the head, as seen in falls or auto accidents.

Risk Factors for Head Injury

A number of groups are at particular risk for head injury, especially children and the elderly. Head injury is the most common form of trauma for which children are admitted to the hospital. The elderly's risk of head injury mainly stems from increased falls suffered by this age group.

In addition, a number of occupations (especially the building trades) carry a high potential head injury risk. Bicyclists, motorcyclists, and ATV devotees who ride without helmets account for a significant percentage of victims of head trauma nationwide.

Treatment

Anyone who suffers a head injury severe enough to cause loss of consciousness should be seen promptly by a physician. Although the injured person may appear "all right" shortly after the injury, he or she may have suffered a small intracranial bleed that will not become evident until hours or even days later, often with tragic consequences. Only after a thorough physical and neurological examination can the victim be deemed "all right" with any degree of certainty. Skull X-rays or a CT scan may be required to assess the damage.

Most individuals with mild to moderate concussions may be cared for at home, but should not be sent home alone. The injured person should be observed carefully over the next 24 to 48 hours, and home observation should include the following checks:

1. Check the previous level of awareness or ease of arousal from sleep every two to four hours.
2. Check to see if the pupils react to light, and are of the same size.
3. Ask the person to move both arms and legs.
4. Make telephone contact with your physician at least once in the 24-48 hour observation period. Call your physician ***immediately*** if you notice the following:

— Difficulty arousing from sleep, or change in the level of awareness.

— One pupil larger than the other, or no reaction to light.

— Inability to move an arm or leg.

— Seizures.

— Complaints of double vision or other visual disturbances, increasingly severe headache, nausea, vomiting, dizziness, or strange sensations in arms or legs.

— A persistent, unexplained fever above 99.5° F.

Although the first 48 hours following a head injury are the most crucial time for observation, be aware that it is not unusual for individuals to display these symptoms days, or even a few weeks later. Consult your physician if this should occur.

Careful observation following head injury by friends and family can lessen many of its complications; however, prevention of head injury is the overall goal. Although some accidents can't be prevented, many head injuries **can** be prevented with the use of protective helmets while on the job, or when riding bicycles, motorcycles, and ATVs. Additionally, seat belts can prevent the head from hitting a dashboard or windshield. Your physician and the Missouri State Medical Association urges patients to "use their heads" and practice head injury prevention at work and at play.

■

This health information feature is provided to you as a public service from your physician and the member physicians of the Missouri State Medical Association.

Special Article

Communication:

Chief of the Seven "C"s of MSMA

Gary A. Dyer, M.D.
MSMA President
St. Joseph, Missouri

Individual physicians are members of both component societies and MSMA. Communication is the facilitator or catalyst for all moves in the individual physician-component society-MSMA loop. To help Missouri physicians achieve the consensus necessary to meet the challenge facing medicine in the 1990s, increasingly effective communication with each member will be needed.

The seven "C"s of the Missouri State Medical Association (MSMA) are:

1. Constituents — Physician members
2. Components — Component Societies, Resident and Student Sections, and Medical Staff Section
3. Convention — Annual Convention of MSMA
4. Council — MSMA Council
5. Commissions & Committees — Standing Commissions and Committees, Ad hoc Committees, and Task Forces
6. Communication
7. Consensus

These represent the building blocks, the machinery, as well as the product of MSMA. One model for visualizing the relationship between the seven "C"s is a diagram in funnel or tornado configuration as illustrated in Figure 1. The building blocks are the individual physician members in the center ring of the diagram. The product is consensus which is used by the association in dealing with Missouri legislators, the general public, or on the national level, the American Medical Association (AMA), and federal legislators. The machinery of the organization and the full-time staff is designed to help the membership arrive at consensus. The argument is being advanced that communication is the chief of the seven "C"s because it is the facilitator or catalyst for all moves in the machinery from building blocks to final product.

In the model, raw data enters the top of the tornado with the exact entry point determined by the nature of the data. Examples of raw data by source and point of entry include:

1. **Resolutions**
   A. Source — Individuals, component societies, specialty societies, Resident or Student sections, the Medical Staff Section, or the Council.
   B. Point of Entry — Annual Convention House of Delegates (HOD)
2. **Recommendations**
   A. Source — Reference Committees at Annual Convention
      Point of Entry — HOD
   B. Source — Standing Committees, Ad hoc Committees, and Task Forces
      Point of Entry — MSMA Council
3. **Motions**
   A. Source — Individuals, components, staff, or outside entities
   B. Point of Entry — MSMA Council Members

Individual physicians (Constituents in the model) are members of component societies **and**

MSMA. Twenty-two component societies are divided into nine Councilor Districts (CD). In addition there are three sections, Resident Section, Student Section and Medical Staff Section, each of which is considered a CD. Each component society and each section selects or elects delegates to serve at each Annual Convention of the HOD. Individual physicians are encouraged to serve as delegates or to communicate their views to delegates or to the component society or section that will be instructing delegates. Component societies and sections should determine the will of their membership and instruct their delegates accordingly. For more complete communication, individual physicians are encouraged to attend each annual convention and participate in reference committee hearings.

The Council of MSMA is composed of officers (President, President-Elect, Secretary, and Treasurer) and Councilors. The 12 CDs elect Councilors to serve on the MSMA Council. Vice-Councilors are also elected and serve in the Councilors' absence. All CDs have one councilor except the following: District 3 — six; District 5 — two; District 7 — four; and District 8 — two.

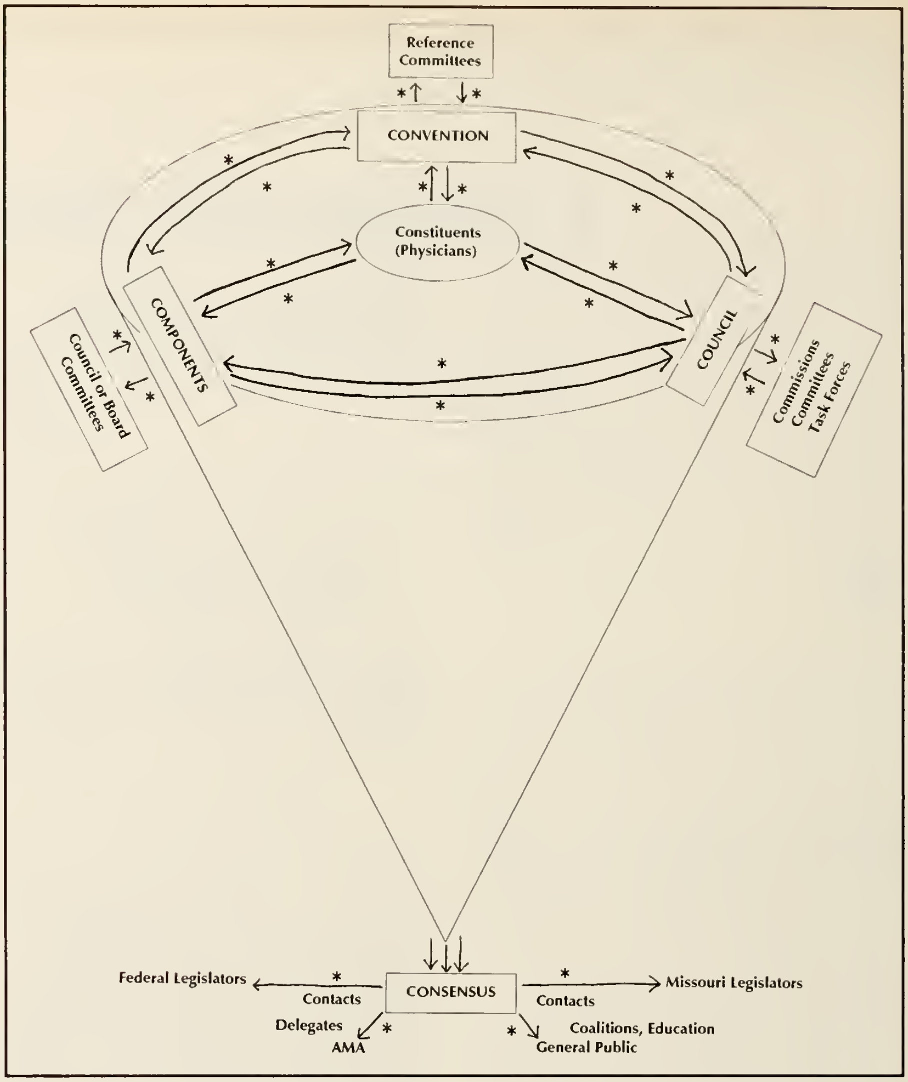

Fig. 1. MSMA Communication. * = Communication Sites

Resolutions are the raw material for the HOD at Annual Convention. They must be submitted in proper form and in timely fashion to become business of the HOD. Resolutions are referred to Reference Committees which ease them apart, combine or amend, and when necessary, create substitute resolutions. The Reference Committee then recommends in writing to the HOD acceptance, rejection, or referral to Council of original resolutions, or acceptance or referral to Council of substituted resolutions. Reference committee hearings may be attended by any member and serve as major forums for member and MSMA communication. Over the years, Reference Committees have functioned very effectively.

Resolutions, recommendations and motions are the raw materials for the Council of MSMA. Resolutions passed by the HOD are sent to the Council for implementation, action, or further study. Recommendations to the Council come from standing committees and commissions, ad hoc committees, and task forces, which report to the Council on a regular or as needed basis. Commissions, committees, ad hoc committees and task forces are major communication sites for MSMA and the individual physicians who serve. In general, they can be counted on to carry out their functions. Individual physicians are encouraged to express their interest in serving, keeping in mind that regional balance must be maintained.

Raw data delivered to Council members of MSMA may come from any source, but usually come from individual members with an idea or problem, component societies, MSMA staff, or outside organizations with an interest in medicine. Outside individuals or groups with very important issues or expertise may be asked to speak before the Council. Individual Council members may report to the Council or make a motion that the Council study, take a position, or take action on a given item. Such motions become raw material for the Council, and may be voted up or down, referred for further study, or tabled. All actions of the Council are printed in Council minutes published in *Missouri Medicine*, mailed to component societies and Councilors, and come before the HOD at the next Annual Meeting for approval. The effectiveness of Council members is directly related to the amount and kind of communication with individual physicians and component societies back home.

Arrows on the tornado diagram show the possible directions of informational flow in the machinery of MSMA. Communication sites are marked with an asterisk, and represent at least 20 sites on the diagram. Each site is a make or break point where communication must take place or else break down. For example, six arrows enter or leave the center ring of the diagram containing the individual physicians. The individual physician may share information with the local component society, or a delegate of that society, with a Councilor or Vice-Councilor of the MSMA Council, or with a Reference Committee at Annual Convention. He may receive communications from these same sources as well as the printed correspondence from MSMA such as *Progress Notes*, *Missouri Medicine*, special mailings, and if the member is a Key Contact, the *Legislative Report*.

Even though 20 or more communication points exist, it is believed that most problems arise in a very few areas. The greatest problem is believed to be the lack of involvement or the lack of desire to communicate by individual physicians. The seriousness of this problem is not uniform across the state and varies from year to year. In those areas where individually involved physicians decrease significantly, the component medical society begins to decline. A spiral of communication problems develops. Council information is not disseminated. Councilors and Vice-Councilors fail to hear about local problems. Meetings are held on an increasingly irregular basis. In some cases delegates are not appointed, or those appointed do not serve. In other cases, because issues are not discussed at the local level, delegates show up at Annual Convention without instructions. Resolutions are not prepared or are of poor quality. The auxiliary may decide to disband. In a few areas, where individuals are active and component societies are in place, complaints occasionally surface regarding sharing of information by Councilors and Vice-Councilors. Councilors and Vice-Councilors are conduits of information, not reservoirs of information.

For effective communication to take place, and for consensus ultimately to be achieved, the physician members must be reached. Each physician must receive timely information on an ongoing basis, must understand the issues and problems of medicine and the activities and positions of MSMA. All members must communicate ideas and problems to MSMA through the various channels on a timely basis. Communication methods must be appropriate for the current practice environment so that good ideas and urgent needs are not lost through inconvenience or resistance in the system. In many cases it will require going back to the old-fashioned techniques of one-on-one physician-to-physician communication. All members must do a better job of helping MSMA (and ultimately themselves) sail the seven "C"s and achieve ongoing consensus. Consensus positions are all that can be effectively used to the benefit of all Missouri physicians by MSMA and the membership on the local, state and national level.

See this month's President's Page (page 735) for 10 suggestions for more effective medical communication.

■

"Doctor, I'm not sleeping well."

A CME course on insomnia for internists, family medicine physicians, neurologists, psychiatrists, and other health professionals.

MONDAY, OCTOBER 29, 1990

8:30 a.m. to 5:00 p.m.

at the Ritz-Carlton Hotel, Clayton, Missouri

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- Shift work related problems
- Basic behavioral treatments
- Special considerations for the elderly
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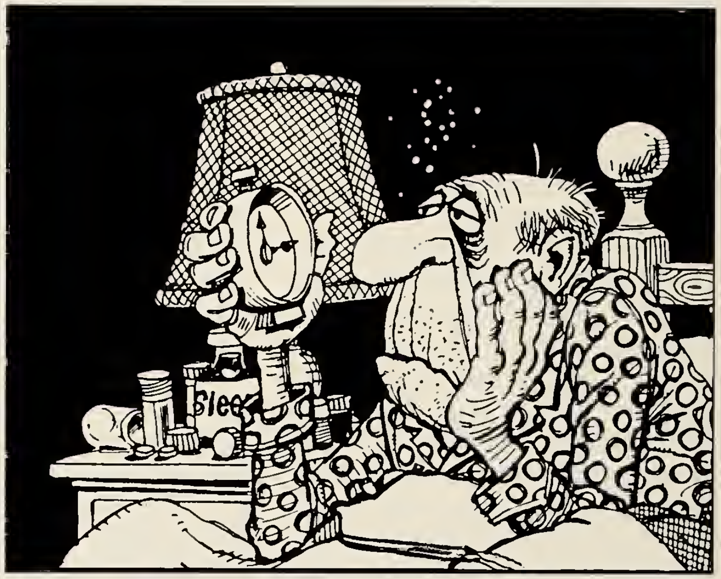

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Special Article

Loxoscelism and the History of the Missouri Brown Spider: A Recollection of Dr. Joseph Flynn

Philip C. Anderson, M.D.
Columbia, Missouri

In this entertaining and informative article, Dr. Anderson gives *Missouri Medicine* readers a taste of history in Missouri medicine.

For many decades, Missouri farmers knew that the bite of a certain small brown spider could produce an especially nasty, slow-to-heal ulcer in the skin. Jim Atkins, practitioner and pathologist at the University of Missouri-Columbia, had seen the rapid development of these characteristic focal necroses of skin. In 1957 he shared his interest in the condition with entomologist Curtis Wingo, and with Joseph Flynn, charismatic chief of pathology at the newly built MU School of Medicine. Dr. Atkins had treated a 14-year-old rural female with the typical painful necrotic skin lesion, and asked her to gather from her home more spiders like the one that had bitten her. This collection was studied by Dr. Wingo* and then sent to Dr. W.J. Gertsch, a famous curator of spiders at the New York Museum of Natural History. All of the spiders were *Loxosceles reclusa*, a species described by Gertsch himself in 1940.[1]

On hearing this story, Dr. William J. Soderman, then chairman of medicine at the University of Missouri-Columbia, recalled from his lifelong studies of tropical medicine a South American brown spider known to cause "gangrenous spots" in the skin. By this recollection, the overlooked medical literature in Spanish (mostly from Chile) was recovered concerning the related species *Loxosceles laeta.*[2]

At this point, the Missouri doctors shared the strong presumption that the venom of *Loxosceles reclusa* was the cause of the distinctive focal necrosis of skin in their patients, but demonstrative laboratory investigations were needed for general medical proof. These were done by Drs. Flynn, Wingo and Atkins in the laboratories of the university.[3,4]

To begin, living loxosceles spiders were provoked to bite rabbits and guinea pigs, demonstrating the prompt onset of necrotic skin lesions only at the site of the bite. Microscopic examination of the rabbit's skin showed a typical infarct. Next, the venom glands of loxosceles spiders were removed and extracted in saline. This crude mixture, injected into the skin of a rabbit, produced the identical lesion within the same time – without a natural bite. Boiled venom was harmless. If minute doses of venom were injected repeatedly, later the rabbit could tolerate an ordinary dose of venom without incident, demonstrating that small doses of venom could be inactivated quickly by the animal's acquired natural immunity. All these findings conformed to the general knowledge of the time about most protein venoms.

*** Dr. Curtis Wingo, residing near Columbia today, verifies these general events.***

Fig. 1. Joseph Flynn, M.D., Chairman of the Department of Pathology 1957-1960, University of Missouri-Columbia Medical Center.

According to common sense medical thought in Missouri, spider bites were not a calamity. Most adults bitten by the brown spider exhibited no adverse effects. A physician might presume that most rural adults became naturally immune. Children were more susceptible to the venom's effects. Farmers believed that those who were bitten and developed an ulcer were never at risk in subsequent bites. Entomologists pointed out that Missouri brown spiders were numerous and that Missourians had lived comfortably among them for at least a century. No new threat to public safety was recognized, and Flynn emphasized the benign nature of almost all bites. Good science gave new authority to his assurances.

In 1957, this detailed description of the link between the loxosceles spider's distinctive venom and the focal necrosis of skin was achieved, in part because Joseph Flynn built an open forum for just this kind of clinical pathology at the MU School of Medicine. A well-planned investigation could be performed cooperatively with specialists from different fields. Flynn's method of teaching bioscience included a devotion to precise methods and the cultivation of curiousity. Flynn always was an exciting teacher and in those days, he could take the time needed to teach well. Students were inspired by Flynn. He drew around him the talented people who could make the small, yet useful discoveries so important to progress in clinical medicine.

Joseph Flynn, M.D., (Iowa, 1938) was trained in pathology at the University of Iowa and served in the U.S. Army (1942-45). He held a faculty position at Columbia University in New York, then in 1954 accepted the chairmanship in pathology at the new four-year MU School of Medicine in Columbia (Fig 1). He inspired students and residents to think for themselves and to study nature with their own senses, rather than taking a simplistic textbook view of the world. Flynn was an inventive experimentalist, and he was curious about everything. The recollections of him are numerous and wonderful to hear. Many remember him casually riding his white horse around the college town, invoking a bit of symbolism.

Flynn stood at the core of the group that first recognized North American loxoscelism. In the 1950s, the only "poisonous spider" acknowledged in the United States was the black widow (*Latrodectus*), so the Missouri "fiddle back" spider leaped to prominence in the popular press, as the "second poisonous spider." Actually, almost all arachnids are venomous, and with their bites, many can produce cutaneous necrosis. The best example is the commonplace *Lycosa* or wolf spider. The bite of *Loxosceles* is distinctive only for causing a more massive cutaneous necrosis and, rarely, a sudden hemolysis.

No mention was made in any of these early papers of the other well-known causes for focal necrosis in the skin, such as bacterial infection, infestation, trauma, artifact, emboli, thrombosis, vasculitis, and others. A presumption seemed to take hold that all focal necrosis in skin always must be due to envenomation and always by loxosceles. Some brief clinical reports followed, using that false assumption. In retrospect, we realize that many other causes of sudden focal necrosis of the skin do exist and that confirmation of the bite of loxosceles is absolutely necessary in investigating and publishing a case study of loxoscelism. The confirmation must be convincing beyond reasonable doubt; the presenter must display real evidence, not merely a clinical opinion (Table 1). Moreover, this evidence should convince almost all of the knowledgeable experts. Because the well-accepted rules of evidence have been ignored, a large part of the total clinical literature on loxoscelism is invalid.

Although Flynn and his investigators did no further work on loxoscelism, others took up the problem. First, scattered brief case reports came from physicians in Missouri,[5] Kansas,[6,7] Oklahoma,[8] Arkansas,[9,10] Tennessee,[11,12,13] Texas,[14] Indiana,[15] Illinois,[16] and Missisipi[17] – the normal regional habitat of the loxosceles spider. In 1963, an investigative team at the University of Arkansas began a well-planned, long-term series of studies of the spider, its venom and documented bites. The Arkansas multi-disciplinary science team studied an unpurified venom and conducted many whole-ani-

Table 1
Suggested Standards For Accurate Reporting of Cases of North American Loxoscelism

1. **Proven Envenomation** *(suitable for publication and investigation in depth)*
    - (a) Spider is recovered immediately and in close proximity to a clinical reaction on skin.
    - (b) Spider is identified by an experienced entomologist and kept for verification later.
    - (c) A reasonable differential diagnosis is done by the attending physician and reviewed by consultants.
    - (d) The details of the case are complete and the patient is followed up properly.
2. **Probable Envenomation** *(suitable only for epidemiologic studies)*
    - (a) Spiders in the immediate vicinity are found and confirmed by an entomologist. Typical proven bites are well-known in this region.
    - (b) The bite reaction is wholly typical of loxoscelism.
    - (c) A differential diagnosis is done in a manner acceptable to clinically experienced experts.
3. **Possible Envenomation**
    - (a) The bite appears typical to experienced physicians.
    - (b) No spiders are recovered in the vicinity.
    - (c) Region is well-known for verified recluse spiders.
    - (d) Other probable/proven bites occurred recently.
4. **Focal Necrosis of Skin**
    - (a) Region has no/few recluse spiders.
    - (b) Proven/possible recent loxoscelism is not common.
    - (c) No loxosceles spiders are recovered nearby.

mal studies, which set many of the criteria to guide the next steps in the investigation of the venom. The clinical group around Dr. Thomas Jansen improved clinical diagnoses and therapy, and set better standards for more decisive laboratory investigations.[20-23] The key to progress was purification of the venom.

A decade later, inspired by the Arkansas studies, a second University of Missouri investigative group published worthwhile studies about purifying the venom. Clinical interest in North American loxoscelism by Missouri dermatologists during the 1970s helped to develop successive sets of untreated, "proven or probable" cases, leading to increased confidence in conservative therapy, and to Richard Berger's papers on the commonplace, "unremarkable" spider bite.[24,25,27-37] Other cooperative groups developed research at Oklahoma State University[38-41] and at Mississippi State University.[42-48]

Then, in 1978, biochemists at the University of Missouri made a notable finding.[36] While investigating hemolysis of the sheep erythrocyte by the venom, the biochemists identified sphingomyelinase-D as the principal agent in the skin-necrotizing 22 KD fraction of crude loxosceles venom. Using purified fractions of venom, they showed that the direct chemical action of sphingomyelinase-D on human platelets and endothelium was sufficient to explain a sudden infarct in skin. By measuring the sphingomyelinase, it was possible to define purity and recognize the uniqueness of the venom of loxosceles.[49-51]

In 1980, a Tennessee group formed around Riley Rees and L.E. King, Jr., who not only had a particular interest in clinical therapy, but also kept their close connection to the laboratory.[52-60] They have shown a special interest in dapsone, and in retarding an early phase of the acute reaction to venom in skin that may be mediated by the polymorphonucleocyte, in keeping with an early observation by Smith and Micks at the University of Texas.[19]

Wisely, Drs. Atkins, Flynn and Wingo resisted the temptation to make recommendations for therapy of brown recluse spider bites. They noted in their brief studies that systemic corticosteroids had no appreciable effect in either rabbit or human. On clinical grounds, they theorized that strong human immunity was a most likely resolution, having demonstrated an acquired immunity in rabbits. They recognized the threat to life as small.

Flynn and his group discovered no credible deaths due to loxoscelism. Three decades later readers might ask if there are many deaths due to brown recluse spider bites. The answer is that none are known in publication, despite many citations to the contrary. The reports by Lesenden,[9] Nicolson,[8] Vorse,[26] Taylor,[11] and Rose[16] are often cited as cases of fatal loxoscelism. Four of these authors candidly admit having no proof of a brown spider bite and plainly claim only a "presumption." Rose's report offers no evidence at all. Vorse's case would (in my opinion) be "probable loxoscelism." To establish a new concept in clinical reporting, only completely proven cases should be recognized. At worst, death from North American loxoscelism is extraordinarily rare.

Again, looking at only well-proven, published, peer-reviewed cases, we have no published reports of massive hemolysis, although several proven cases have been presented at clinical meetings. The accounts of hemolysis by Weiner[6] and Minton[15] mention only yellow and brown "bugs" and Taylor's case[11] is mere presumption, as he states. Vorse refers to an "unidentified insect." There is plenty of room for good clinical reports in the medical literature.

Long before Atkins, Flynn and Wingo, the people of Missouri knew that the nasty ulcers caused by the bite of the brown spider healed very nicely, if slowly, without any medical treatment. In addition, those of us who personally see many "probable or proven" bites every year, can testify that some may suddenly involute spontaneously, many heal without delay, and only some are slow to resolve. Physicians must not attribute all these natural involutions to the actions of their favorite remedy. Clinical experience today is that no medications importantly modify or reliably prevent necrosis of the skin, as known to be due to **proven** loxoscelism. No well-controlled, truly randomized study of any medication entirely protects even the rabbit against venom-induced necrosis. Given this well-known tendency of the bites to heal themselves, practitioners must be careful not to overtreat the case or misinterpret the outcome. Unnecessary and expensive surgical treatment is the rule in some regions. Some of the better studies of therapy, appropriately interpreted, were done by Rees et al.[58,59]

We are now looking back on 30 years of experience with North American loxoscelism, and we ought to be able to plan ahead to better clinical reports and laboratory investigations. Of exceptional clinical interest is the hemolysis, seen mostly in children. Because human red blood cells are not readily hemolyzed by sphingomyelinase-D, it seems very unlikely that the rapid and massive hemolysis is caused simply by the direct action of venom, nor only by the usual activation of complement chains.[36] More close work is needed. To understand and measure the natural immunity in humans is another topic of interest.[61] The other concern is to complete all biochemical studies of the purified sphingomyelinase-D, in order to know its characteristics in contrast to other sphingomyelinases, and its entire chemical structure.

Figure 2
Missouri Students of the Brown Recluse Spider

Joseph Flynn
Jim Atkins
Curtis Wingo
R.P. Wright
J.H. Finke
K.D. Elgert
M.A. Rose
B.J. Campbell
H.M. Gebel
Gretchen Kurpiewski
Larry Forrester
Jim Barrett
Robert Hall
Richard Berger
Larry Millikan
Joe Phaneuf
Fred Conway
Jim Roller
Ed Adelstein
G.S. Wasserman
P.C. Anderson

In summary, the clever spider venom demonstration enacted 30 years ago by Dr. Joseph Flynn and associates, has stimulated many useful medical studies, in both laboratory and clinic. These studies continue today.[62-66] Fig 2). However generous the funding might be for research, or however numerous are the laboratories, human curiousity and creativity are still the prime requirements for doing useful medical research.

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The Author

PHILIP C. ANDERSON, M.D.

Dr. Anderson is a professor and chairman of the Division of Dermatology at the University of Missouri-Columbia School of Medicine, University Hospital and Clinics in Columbia, Missouri.

Reprints

Philip C. Anderson, M.D.
Division of Dermatology
University of Missouri-Columbia
M173
1 Hospital Drive
Columbia, MO 65212

SPECIAL SERIES: Chronic Disease Reports

Breast Cancer in Missouri:

Staging, Survival, and Mammography Screening Patterns

Ross C. Brownson, Ph.D., Jian C. Chang, Ph.D., James R. Davis, M.S.,
Joan C. Wilkerson, and **Jeanette Jackson Thompson, Ph.D.**
Columbia, Missouri

In this article, the authors describe stage at diagnosis, survival patterns, and mammography screening patterns for breast cancer among Missouri females.

Breast cancer is the most frequently diagnosed cancer type among Missouri females and is second only to lung cancer as the leading cause of cancer deaths in women.[1] In 1989, breast cancer accounted for 1,000 deaths in Missouri.[2]

Currently, no single factor or combination of factors can predict the occurrence or explain the etiology of breast cancer,[3] although a number of risk factors for breast cancer have been identified. These factors include age, personal or family history of breast cancer, having never been married, nulliparity or having first child after age 30, early age at menarche, late age at menopause, fibrocystic breast disease, and high socioeconomic status.[1,4]

Although breast cancer incidence has increased over the past 30 years, breast cancer mortality has remained remarkably stable due to an increased awareness of breast cancer that has resulted in earlier detection and more favorable survival.[4]

Methods

Stage at Diagnosis Analyses. Since tumor stage at diagnosis is an important predictor of breast cancer mortality,[1] data from the Missouri Cancer Registry (MCR), a statewide central registry, were used to determine the stage at diagnosis among breast cancer cases. Cancer reporting by Missouri hospitals has been mandated by law since 1984.[5] Stage at diagnosis was classified as localized, regional, or distant, based on the medical record of each patient. Less than 1% of the cases were classified as "unknown" and these were excluded from the analyses.

Survival Analyses. Data from the MCR were also used to determine five-year survival rates for breast cancer by stage at diagnosis.[6] For the present analyses, only breast cancer data from hospitals that routinely submit follow-up information (i.e., mainly American College of Surgeons-approved hospitals) were used. The survival analyses were based on 15,037 breast cancer cases from 1980 to 1988. This represented approximately 70% of all breast cancer cases reported to the Registry for this period. Relative survival was calculated by using life table analysis according to the method of Ederer et al.[7]

Mammography Screening Data. Since 1985, the Missouri Department of Health has been collecting data on the prevalence of behavioral risk factors such

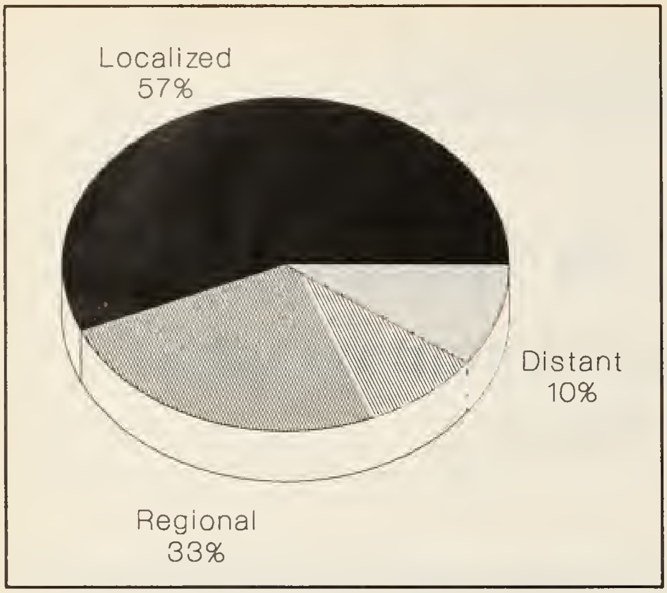

Fig. 1. Stage at diagnosis for breast cancer among Missouri females, 1984-1988.

as smoking, hypertension, high blood cholesterol, physical inactivity, and obesity. This surveillance system, sponsored by the Centers for Disease Control, uses a random digit dialing technique[8] to select adult Missourians, ages 18 years and older, for telephone interviews. The interviews are conducted monthly. For selected years, questions on the patterns and determinants of mammography screening were asked of female respondents. A total of 1,705 interviews addressing mammography were available for analysis, although not all questions were completed for all respondents. Because screening guidelines vary by age group,[1] results for mammography screening were calculated separately for three age groups: 35-39 years, 40-49 years, and 50 years and older.

Results

Breast cancer stage at the time of diagnosis is presented in Figure 1. More than half (57%) of the breast cancer cases reported to the MCR were diagnosed at the localized stage. Thirty-three percent were regional cases and 10% were distant diagnoses.

Figure 2 illustrates some important differences in breast cancer survival according to stage at diagnosis. Among women diagnosed with localized breast cancer, five-year survival was 92%. In contrast, five-year survival rates for regional and distant breast cancer were 63% and 35%, respectively. Five-year survival for all stages combined was 68%.

The vast majority of adult Missouri females surveyed had heard of mammography screening (Fig 3). More respondents had heard of mammography in the 35-39 year (96%) and the 40-49 year (96%) age groups than in the 50-year and older age group (91%).

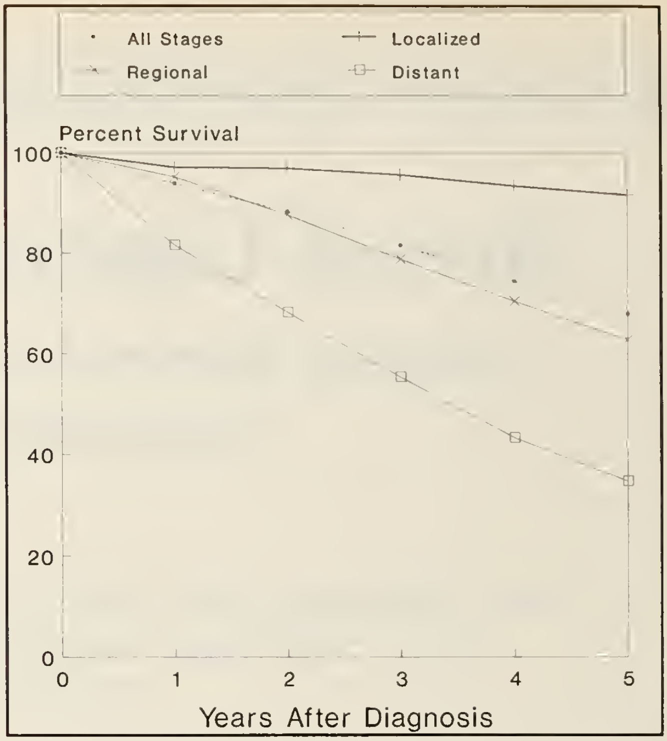

Fig. 2. Five-year breast cancer survival patterns among white Missouri females, 1980-1988.

Figure 4 illustrates the percentage of Missouri women in three age groups who reported ever having a mammogram. As one would expect based on screening recommendations, more women in the 40-49 year and 50-year and older age groups than in the 35-39 year age group had undergone mammography. These results also varied according to household income — an indicator of socioeconomic status. The frequencies of ever having a mammogram for females with incomes of less than $15,000, $15,000 to $25,000, and greater than $25,000 were 39%, 50%, and 56%, respectively.

Although not shown in a figure, data were analyzed according to recency of the last mammogram for respondents in the 40-49 year and 50-year and older age groups. These are the age groups for which routine mammograpy is recommended (ACS). Analyzing results according to American Cancer Society recommendations,[1] 45% of Missouri females ages 40-49 had undergone mammography in the past two years. For respondents 50-years and older, 32% had undergone mammography in the past year. These findings showed similar patterns according to household income as those for ever having mammography.

Two questions on the survey asked about reasons for having or not having a mammogram at recommended intervals. Of respondents who had under-

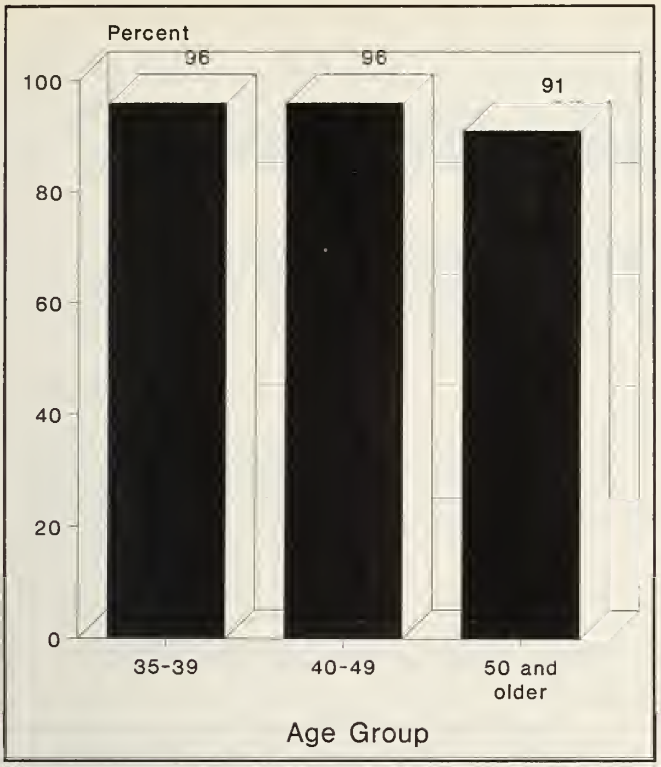

Fig. 3. Percentage of Missouri females who reported ever having heard of a mammogram, 1987-1990.

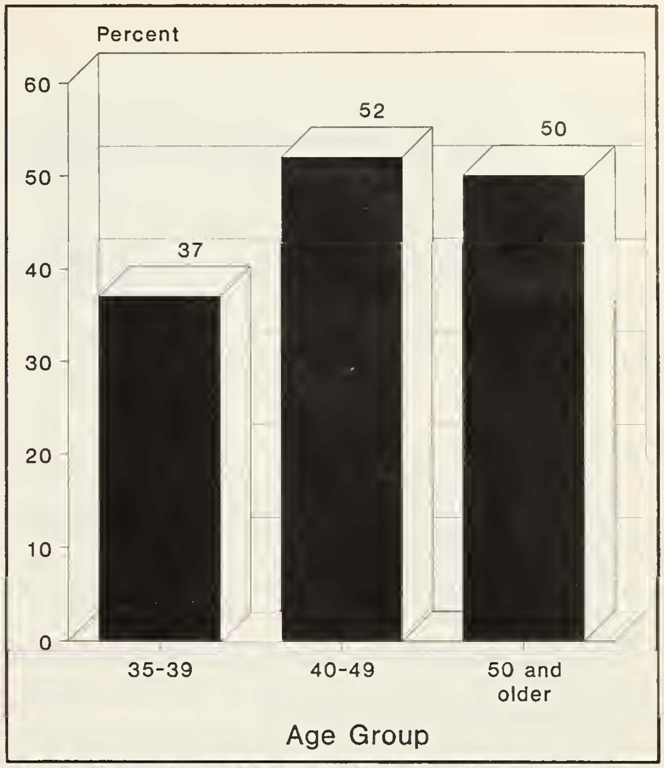

Fig. 4. Percentage of Missouri females who reported ever having a mammogram, 1987-1990.

gone mammography, 79% said their mammogram was part of a routine check-up, 16% cited a breast problem as the reason for mammography, 3% had a previous cancer, and 2% had no specific reason or refused to answer the question. For women ages 50 and older who had not had a mammogram in the past year, the reasons they cited included: they felt the procedure was not necessary (41%); no recommendation by their physician (30%); high cost or lack of insurance coverage (5%); and a variety of others reasons or refusal to answer the question (24%).

Discussion

Our findings suggest that a substantial number of breast cancer deaths could be prevented through increased use of early detection practices, especially screening mammography.

Results on staging of breast cancer showed that a substantial percentage (43%) of Missouri cases were diagnosed at regional or distant stages, for which survival is much lower than at the localized stage.

The overall survival rate in Missouri whites was 68%, which compares with 75% survival in the national Surveillance, Epidemiology, and End Results Program.[1] As illustrated in Figure 2, our results showed that survival varied widely according to the stage at diagnosis.

Our random telephone survey of Missourians' mammography practices and beliefs showed that a substantial proportion of females do not undergo regular mammography. Although nearly all respondents had heard of mammography, only 45% of 40-49 year-olds and 32% of 50-year and older females had undergone mammography according to current national guidelines. The finding for the 50-year and older age group is close to the median of 30% among 33 states surveyed in 1987.[9] Women in lower income brackets utilized mammography less frequently than those in upper brackets, possibly because of lack of education on the need for mammography and/or cost of the procedure.

The two major reasons for women not having a mammogram — the lack of a perceived need by the respondent and no recommendation from their physician — suggest that substantially increased public and health care provider education are needed on the benefits of mammography. A recent national survey of cancer early detection practices among primary care physicians found that cost is the single most important factor that discourages physicians from recommending mammography.[10]

Conclusion

Since there are no viable methods for primary prevention of breast cancer, early detection is the only means by which the large number of deaths due to breast cancer can be reduced. The National Cancer Institute has estimated that breast cancer mortality could be reduced by 30% by the Year 2000 through widespread use of mammography.[11] If this goal is to be realized, physicians and other health care professionals must play active roles in educating patients on the critical importance of routine screening for breast cancer.

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The Authors

ROSS C. BROWNSON, Ph.D.
JIAN C. CHANG, Ph.D.
JAMES R. DAVIS, M.S.
JOAN C. WILKERSON
JEANETTE JACKSON THOMPSON, Ph.D.

All of the authors are affiliated with the Missouri Department of Health, Columbia, Missouri. Dr. Brownson is Director of the Division of Chronic Disease Prevention and Health Promotion. Dr. Chang and Ms. Wilkerson are with the Missouri Cancer Registry and Mr. Davis and Dr. Thompson are affiliated with the Bureau of Smoking, Tobacco, and Cancer.

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Reprints

Ross C. Brownson, Ph.D., Director
Division of Chronic Disease
Prevention and Health Promotion
Missouri Department of Health
201 Business Loop 70 West
Columbia, MO 65203

Breast Cancer Awareness Month

October is National Breast Cancer Awareness Month. During this month, American Cancer Society (ACS) volunteers will conduct numerous activities including coordination of reduced cost mammograms and education of the public and health care professionals on the importance of mammography, breast physical exams, and monthly breast self-exams. More information on these programs is available by calling 1-800-ACS-2345.

The ACS will also use the month as a forum to educate Missourians about Senate Bill 742. Senate Bill 742, passed by the Missouri Legislature and signed by the Governor, requires all individual and group health insurance policies issued or renewed after August 28, 1990 to provide coverage of low-dose mammography screening for nonsymptomatic women. Minimum benefits must include a baseline mammogram for women age 35-39 years; a mammogram every two years for women age 40-49 years; and a mammogram every year for women age 50 and older.

The *Guide to Clinical Preventive Services, Report of the U.S. Preventive Services Task Force* is an excellent review of breast cancer early detection methods, as well as numerous other screening tests, counseling procedures, immunizations, and chemoprophylactic regimens. The *Guide* was produced by a panel of 20 experts from medicine and related fields. It systematically discusses the evidence for 169 interventions to prevent 60 different illnesses and conditions. Further information on the *Guide* may be obtained by calling 1-800-638-5198. ■

Current Management of Primary Breast Cancer

Part II:
Adjuvant Therapy and Management of Stage III Disease and In-Situ Carcinoma

Marvin J. Lopez, M.D., F.A.C.S., and **Dorothy P. Andriole, M.D.**
St. Louis, Missouri

In the second of two parts, the authors discuss adjuvant therapy, treatment of locally advanced breast cancer, and management of carcinoma in situ. In last month's issue, the aspects of screening, staging, diagnosis, and treatment of early breast cancer were presented.

Recommendations for the treatment of breast cancer continue to evolve. In this section, we review a number of studies and reports that have most influenced treatment decisions over recent years.

Adjuvant Therapy

In a significant number of patients, invasive breast carcinoma is probably a systemic disease at the time of diagnosis. Abundant data are available supporting the use of adjuvant therapy in several groups of breast cancer patients. Current recommendations on the use of adjuvant therapy were shaped in large part by the Consensus Development Conference on Adjuvant Therapy for Breast Cancer, convened by the National Institutes of Health (NIH). A decade ago, this panel concluded that the value of adjuvant chemotherapy had been established only for premenopausal breast cancer patients with axillary lymph node metastases. During a second consensus conference conducted in 1985, the panel determined that postmenopausal women who had positive axillary lymph nodes and were estrogen receptor (ER) positive benefited from the adjuvant use of tamoxifen. For premenopausal women with negative axillary lymph nodes, adjuvant chemotherapy was not generally recommended outside of a study setting, except for "high-risk" patients, in whom it should be considered. The panel did not recommend adjuvant treatment as a standard practice for postmenopausal women with positive axillary lymph nodes and negative hormone receptor levels. Similarly, routine adjuvant therapy for postmenopausal women with negative axillary lymph nodes was not recommended, regardless of hormone receptor status.

During the four ensuing years, additional recommendations for adjuvant therapy of breast cancer have been made. Indeed, a substantial amount of data has been published within the last few years regarding adjuvant chemotherapy in node-negative breast cancer patients. The NIH issued a clinical alert on May 18, 1988, and concluded that "adjuvant hormonal or cytotoxic chemotherapy can have a meaningful impact on the natural history of node-negative breast cancer patients." These recommendations were based primarily on the results of the Ludwig Breast Cancer Study

Table 1
Current Recommendations for Adjuvant Therapy of Breast Cancer Outside Clinical Trials

		Node-Positive Patients		Node-Negative Patients
Pre-Menopausal	<	ER+	Chemotherapy	Tamoxifen
		ER-	Chemotherapy	Chemotherapy for Selected High Risk Patients*
Post-Menopausal	<	ER+	Tamoxifen	Tamoxifen
		ER-	Chemotherapy?	Chemotherapy for Selected High Risk Patients*

* The role of adjuvant chemotherapy in node-negative, ER-negative patients is evolving. We recommend that these patients be considered for inclusion in prospective, randomized clinical trials.

Group,[1] the Intergroup Study[2] initiated by the Eastern Cooperative Oncology Group (ECOG), Southwest Oncology Group (SWOG), Cancer and Leukemia Group B (CALGB), and the National Surgical Adjuvant Breast Project (NSABP) B-14 and B-13 trials.[3,4] The Ludwig Breast Cancer Study Group[1] compared a single perioperative cycle of adjuvant combination chemotherapy with no adjuvant treatment. At a median follow-up of 42 months, the disease-free survival rate was 77% for patients who received chemotherapy, compared to 73% for those who did not. This difference was statistically significant. The Intergroup Study[2] reported the treatment results in 536 women randomly assigned to six cycles of four-drug chemotherapy or observation. With a median follow-up of three years, the overall disease-free survival rate among patients treated with the four-drug regime was 84%, compared with 69% for the control group. Disease-free survival was prolonged for both premenopausal and postmenopausal patients with either positive or negative estrogen receptor levels. This toxic regimen, however, led to severe hematologic complications in 33% of treated patients.

A randomized trial by the NSABP Group[4] (B-13) evaluated sequential methotrexate and 5-FU for treatment of patients with node-negative breast carcinoma who also had estrogen receptor-negative tumors. While no overall survival advantage was observed with this treatment, there was a significant improvement in disease-free survival among the treated group (80% versus 71%). The NSABP[3] also conducted a trial (B-14) of adjuvant tamoxifen versus no therapy in node-negative, ER-positive breast cancer patients. The absolute four-year relapse-free survival for the tamoxifen-treated group was 82% compared with 77% for the control group. A marginal benefit was also found for patients with ER-negative tumors. However, tamoxifen is, at present, recommended only for patients with ER-positive tumors. Most investigators agree that adjuvant therapy of node-negative breast cancer patients is still evolving, and, if possible, node-negative breast cancer patients should be considered for participation in randomized prospective trials. For example, a three-arm study by the NSABP (B-21 Protocol) is randomizing patients, after excision of invasive carcinomas measuring less than 1 cm and axillary dissection, to receive radiotherapy and placebo, radiotherapy and tamoxifen, or tamoxifen alone.[5]

At present, there is sufficient evidence to suggest that node-negative, ER-positive patients may be treated with tamoxifen, whereas certain high risk groups of node-negative, ER-negative patients may be treated with chemotherapy. These high-risk patients include premenopausal women or women who have large primary tumors with high nuclear grade, high DNA content, or aneuploidy. Other potential prognostic indications under current investigation include the HER 2/neu oncogene and cathepsin D.[6,7]

Protoadjuvant chemotherapy (chemotherapy before any surgery) is under study by the NSABP group. Patients with operable breast cancer diagnosed by fine needle aspiration are being randomized to receive four courses of doxorubicin/cyclophosphamide either preoperatively or after surgery (B-18 Protocol).[5] The present recommendations regarding adjuvant therapy in various groups of breast cancer patients are shown in Table 1. It is important to underscore that controversy exists regarding the moral, ethical, and socioeconomic aspects of adjuvant therapy of breast cancer. Unfortunately, the potential benefit to an individual patient is difficult, if not impossible, to estimate on the basis of collective benefit (4%-15%), particularly when the benefit is merely a delay in recurrence and not an improvement in overall survival.[8]

Treatment of Locally Advanced Breast Cancer (Stage III)

During the last decade, the management of locally advanced carcinoma of the breast has progressed. There has been substantial improvement in local tumor control and prolonged survival in a group of patients with tumors once considered to be uniformly and rapidly fatal. The poor results obtained with surgery alone when the carcinoma has ulcerated, was fixed to the chest wall, had developed satellite nodules, or produced edema of the breast, prompted Haagensen and Stout[9] in 1943 to develop criteria for inoperability. Substantial improvement in local tumor control rates occurred in the 1960s and 1970s, when radiotherapeutic technology improved and larger doses could be administered safely. A multi-modality approach to the management of locally advanced carcinoma of the breast using chemotherapy as primary treatment was first instituted in the early 1970s. During the 1980s, local tumor control and overall survival rates have improved (Table 2).[10-13]

Locally advanced carcinoma of the breast is defined as stages IIIA and IIIB (Table 3). These groups account for less than 10% of all breast cancers. Consequently, most clinical trials have been conducted using small groups of non-randomized patients, a variety of chemotherapeutic combinations, and patients with heterogenous tumors. It appears that both surgery and radiation therapy can be equally effective in controlling local disease when preceded by multi-drug chemotherapy. Two prospective studies support this statement. DeLena and associates,[10] from the National Cancer Institute in Milan, Italy, studied the efficacy of two combined modality approaches (chemotherapy plus radiotherapy vs chemotherapy plus mastectomy). One hundred thirty-two women with locally advanced breast cancer were entered into the study. Chemotherapy consisted of doxorubicin plus vincristine given for three cycles prior to therapy for local control. Although a higher proportion of women achieved complete remission after mastectomy (100%) compared with women given radiotherapy (60%), the total response rate at the end of the combined modality approach was identical (75%). A detailed analysis of these two groups showed no significant differences in patterns of treatment failure, median duration of response, and overall survival. Perloff and associates[11] reported on 113 patients with previously untreated stage III breast carcinoma, including patients with inflammatory carcinoma, all of whom received three monthly cycles of cyclophosphamide, doxorubicin, 5-FU, vincristine, and prednisone (CAFVP). In order to determine the best modality for local tumor control, all patients who were deemed operable following chemotherapy (81%) were randomized to receive surgery or radiotherapy. The median duration of overall disease control was 29 months in patients undergoing surgery versus 24 months in patients receiving radiotherapy. There was no difference in median survival between the two groups (39 months).

Data from the National Cancer Institute[12] reveal similarly encouraging results. A total of 47 patients with stage IIIA and 56 patients with stage IIIB carcinomas were entered into the study. Following multidrug chemotherapy, including hormonal synchronization, an open breast biopsy was performed. If no tumor remained, patients were treated with radiation therapy. If tumor persisted, the local treatment was mastectomy plus radiation therapy. Additional chemotherapy followed either treatment. After a median follow-up of 32 months, the overall objective response rate to induction chemotherapy was 95%. The median time to progression was 33 months for stage IIIA, 28 months for stage IIIB, and 23 months for IIIB inflammatory. The median survival of patients with inflammatory carcinoma was 39 months compared to 43 months for stage IIIB patients without inflammatory component. The median survival of all patients was 50 months.

While the complete response and median survival rates are lower for patients with inflammatory breast cancer when compared to non-inflammatory locally advanced carcinoma, the treatment approaches are the same. As in other groups of patients with locally advanced breast carcinoma, results of multi-modality management for inflammatory carcinoma using neoadjuvant chemotherapy are superior to other combined modalities not preceded by chemotherapy. Rouesse and associates[13] reported a four-year disease-free survival rate of 54% in a group of 79 patients with inflammatory carcinoma treated with induction multidrug chemotherapy plus radiotherapy. In contrast, the four-year disease-free survival rate in 60 patients treated with breast irradiation and hormonal therapy was only 15%.

Mastectomy appears to have regained a definite place in the management of locally advanced disease. In a non-randomized study of 107 patients with inflammatory breast carcinoma, Fields and associates[14] reported that patients undergoing mastectomy plus radiotherapy showed markedly improved relapse-free survival and longer survival time than patients treated with radiotherapy but not mastectomy. This statistically significant difference was independent of the in-

Table 2
Selected Trials of Multi-Modality Treatment With Initial Chemotherapy for Stage III Breast Carcinoma

Author *(Year, Ref.)*	Number of Patients	Criteria Inclusion	Treatment Protocol	Randomization	Local Control%	MedianSurvival, Months
DeLena *(1981, 10)*	132	Stage III, excluding inflammatory or N3 Nodes	RT AV(3) or AV(7) S	S vs. RT for local control	RT: 69 S: 70*	RT: 52 S: 49*
Riouese *(1986,13)*	79	Stage III, including inflammatory only	CAFVM(3) AV(1) AVM(5) VCF(4-12)[a] RT RT	NR	69	Indeterminate (>48)
Swain *(1987, 12)*	76	Stage III, including inflammatory	RT CAGM(var) and/or CAM(6)[a] S	NR	86	39:IIIA-Indeterminate IIIB - 35
Perloff *(1988, 11)*	113	Stage III, including inflammatory, excluding T3N0	RT CAFVP(3) or CAFV(24) S	S vs. RT for local control	RT: 73 S: 81*	RT: 39 S: 39.3*

A:	Doxorubicin	P:	Prednisone	a :	Also included hormonal manipulation
V:	Vincristine	NR:	Not Randomized	( ):	Number of cycles of chemotherapy
C:	Cyclophosphamide	RT:	Radiation Therapy	(var):	Variable number of cycles of chemotherapy
F:	5-Fluorouracil	S:	Surgery (Mastectomy)	* :	No Significant Difference
M:	Methotrexate				

fluence of other variables. Fastenberg and associates[15] have used a combination of mastectomy plus radiotherapy after induction chemotherapy. No local relapses were observed in this group, and the overall survival compared favorably to historical controls who received radiotherapy without mastectomy. The combination of all modalities of treatment (chemotherapy, surgery, and radiotherapy) should be considered in selected patients who have resected tumors at or near the surgical margin and those with extensive and incompletely resected axillary adenopathy. Combining all modalities may yield an increase in local control rates, but may lead to higher morbidity, specifically surgical complications due to operating upon irradiated tissues or arm edema produced by the combination of axillary dissection and irradiation.

At present, doxorubicin-containing multi-drug chemotherapy should be used as the primary form of management. Our experience suggest that after four cycles of chemotherapy, mastectomy should be performed if tumor-free margins can be obtained. The appropriate type of mastectomy for this disease depends on many patient and tumor factors. Thus, simple, modified radical and radical mastectomy all have a place in controlling local disease. Radiation therapy, the other modality for local control, is ideal for patients who refuse surgery, are poor candidates for operation, have residual tumor following surgery, who have disseminated disease and short life expectancy, or those whose tumors remain inoperable following chemotherapy. A randomized prospective study will be required to assess the independent value of radiotherapy as an adjunct to chemotherapy and mastectomy. Chemotherapy should be continued following mastectomy or radiotherapy for at least six months to one year. Investigators continue to study high-dose chemotherapy and bone marrow transplantation as options for the treatment of patients with stage IIIB breast carcinoma.

Treatment of Carcinoma In Situ (Stage 0)

Whether or not carcinoma in situ is a precursor of invasive breast cancer remains a matter of controversy. However, there is no doubt that the presence of these preinvasive lesions is associated with a substantial incidence of multicentric disease, bilaterality, and risk of developing an invasive carcinoma. Lobular carcinoma in situ (LCIS) and ductal carcinoma in situ (DCIS) each involves different therapeutic strategies.

Lobular Carcinoma In Situ (LCIS)

Described almost 50 years ago by Foote and Stewart,[16] LCIS is multicentric in about 80% and bilateral in between 15% and 40% of patients. It accounts for fewer than 5% of all breast cancers. It is less freqent than ductal carcinoma in situ and is more commonly found in premenopausal women. The surgical management of LCIS has traditionally been mastectomy, based on data showing that the projected cumulative risk of subsequent cancers is approximately 35% for the ipsilateral breast and 25% for the contralateral breast. The dilemma in treating LCIS is that appropriate treatment for one breast would also seem appropriate for the opposite breast.

Because of the encouraging results of breast conservation treatment in invasive disease, it has been postulated that breast preservation should also be an effective treatment for a premalignant lesion. Since there is no demonstrable role for radiotherapy in LCIS, an alternative method of management is excisional biopsy and close observation with frequent mammographic and physical evaluations. One group,[17] however, found this method suboptimal because despite careful follow-up, 75% of the subsequent invasive carcinomas detected in patients with LCIS were T2 or greater. Bilateral mastectomy with immediate reconstruction, while it may seem excessive, is an available alternative for patients with proven bilateral LCIS, particularly those patients with a family history of breast cancer. Due to the controversial nature of the present management strategies, we emphasize a frank and thorough discussion of the various alternatives with the patient. The sophistication of present mammographic techniques and the increasing experience of radiologists in breast imaging suggest that the evolving trend is to perform conservative surgery for LCIS. For the same reason, a mirror image contralateral breast biopsy is not indicated if physical examination and mammography are normal.

Table 3
Staging of Locally Advanced Breast Cancer

Stage IIIA	T0	N2	M0	
	T1	N2	M0	
	T2	N2	M0	
	T3	N1,N2	M0	
Stage IIIB	T4	Any N	M0	
		Any T	N3	M0

Ductal Carcinoma In Situ (Intraductal Carcinoma of the Breast)

Ductal carcinoma in situ (DCIS) is defined as a proliferation of malignant cells confined to the mammary ducts without microscopic evidence of invasion through the basement membrane. Some of the biologic features that distinguish DCIS from LCIS are less frequent multicentricity, and bilaterality at a rate close to that of invasive ductal carcinoma. It is generally accepted that the cumulative risk of invasive carcinoma developing in the opposite breast is only slightly higher than the general population risk of 10%. Unlike LCIS, DCIS is associated with a greater incidence of ipsilateral recurrence. Not infrequently, those with recurrent DCIS have also developed invasive carcinoma in the same breast.[18] Mastectomy has remained the standard form of treatment for DCIS. The major argument in favor of mastectomy is that long-term local tumor control and survival rate approach 100%. Breast conservation treatment for invasive carcinoma has had an obvious impact on the management of DCIS. Data supporting conservation surgery for patients with DCIS are considered preliminary due to the small number of patients treated and the brief follow-up. Proponents of this approach suggest that treatment of recurrence with further excision or mastectomy resulted in five-year survival rates similar to those obtained in patients treated initially by mastectomy. Some of the indirect evidence for a conservative approach originated from one of the NSABP trials. Among 2,072 patients randomized to mastectomy, segmental mastectomy plus breast irradiation, or segmental resection alone, 78 patients who were initially diagnosed as having invasive carcinomas and were randomly treated, were later found to have had DCIS on histological re-evaluation of the initial specimen. Among this group of patients, 29 were treated by excision and radiotherapy, 22 were treated by excision alone, and 27 by total mastectomy. In 1986, Fisher and associates[19] reported that with a median follow-up of 39 months, there was a 22.7% local recurrence rate among patients treated by excision alone, 6.9% recurrenct rate for patients treated by excision and radiotherapy, and no local recurrences in patients treated by total mastectomy. Patients who developed local recurrence after segmental mastectomy underwent mastectomy. So far, distant failures have occurred in only two patients, one treated by mastectomy and the other by breast conservation. These data suggest that radiation therapy is effective in reducing local recurrence rates in patients with DCIS. However, recommendations for breast conservation therapy for patients with DCIS must await the results of the ongoing randomized NSABP (B-17) trial (lumpectomy vs lumpectomy plus radiotherapy) and maturation of other reported series.

Conclusion

It is evident that the therapy of primary breast carcinoma continues to evolve. Early detection practices have a definite place in efforts to decrease mortality from breast carcinoma. Breast conservation therapy for patients with invasive carcinoma is obtaining wide aceptance, but patients must be carefully selected. Similarly, adjuvant therapy of breast cancer has an established role for many patients. However, it is for randomized, prospective trials to clarify the benefits. Locally advanced breast carcinoma is no longer the hopeless disease of previous decades. Long-term survival is now possible with neoadjuvant chemotherapy. Treatment of carcinoma in situ remains controversial. Current trends suggest a conservative surgical approach and close surveillance for LCIS. However, while breast conservation therapy (segmental resection plus radiotherapy) may prove appropriate for DCIS, total mastectomy remains the standard treatment, pending results of clinical trials.

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The Authors

MARVIN J. LOPEZ, M.D., FACS
DOROTHY P. ANDRIOLE, M.D.

Dr. Lopez and Dr. Andriole are members of the Department of Surgery at Washington University School of Medicine and attending surgeons at Barnes Hospital in St. Louis, Missouri.

Reprints

Marvin J. Lopez, M.D.
5102 Queeny Tower
Barnes Hospital Plaza
St. Louis, MO 63110

Oral Contraceptives and Breast Cancer

John W. Gay, M.D., and **Michael S. Cardwell, M.D.**
Columbia, Missouri

The possible relationship of oral contraception use to breast cancer is a concern to physicians and their patients. In this article, the authors present a review of the major studies conducted during the last 10 years, from an epidemiologic viewpoint.

Since their introduction nearly 30 years ago, oral contraceptives have become a popular method of birth control in many countries. More than 150 million women have taken the pill, and more than 60 million use it today. There are more than 13 million current users in the United States alone. It has been estimated that of U.S. women in their mid-30s, 80% currently take or have taken oral contraceptives at some time in their lives. There is concern that oral contraceptives may increase the risk of breast cancer, since most of the known risks of breast cancer are related to steroid hormones. These concerns were not widely addressed until the 1970s, nearly 10 years after the pill was introduced. Beginning in the 1970s, investigators studied the many aspects of the relationship between oral contraceptive use and breast cancer. There have been numerous case-control studies and some large prospective studies. Almost all the studies in the 1970s were reassuring. Then in the 1980s reports began finding increased risk of breast cancer in various groups of oral contraceptive users.

The first study to cause widespread alarm was that by Pike reported in *Lancet* in 1983.[2] He looked at 314 breast cancer cases in Los Angeles and 314 neighborhood controls. Controls were picked from the same neighborhood to try to match for socioeconomic level, a known risk factor in breast cancer. He found an increased risk of breast cancer in women younger than age 37 who took the pill before age 25. The risk increased with longer duration of use, and increased with use of what he classified as high potency progestins (based on delay of menses test). For all types of oral contraceptives, the relative risk was 2.0 for 49 to 72 months of use, increasing to 4.9 for more than 73 months of use. For pills he classified "high potency," the risk was 2.4 for 25-48 months of use, 4.1 for 49-73 months of use, and infinity for more than 73 months of use. He found the risk was increased for long-term use at a young age, regardless of the time from first use to the first term pregnancy.

Also in 1983, a case control study by McPherson and Vessey of breast cancer cases in London and Oxford reported an increased risk from oral contraceptive use before the first term pregnancy. The relative risk was 1.7 for 1-4 years of use, rising to 3.1 for more than four years of use. In 1987 McPherson reported data on 1,124 women with breast cancer between ages 16 and 64, collected between 1980 and 1984. In this group, 351 patients were less than 45 years of age. He again reported an increased risk of breast cancer associated with an increasing duration of pill use before the first term pregnancy. For more than four years of use, the relative risk was 2.6 (compared to never-users).

The Royal College of General Practitioners (RCGP) study is a large British prospective study that in 1981 reported no overall increased risk of breast cancer, but a greater risk in the group who were age 30-34 at the time of diagnosis.[4] This was based on 131 cases and a total cohort of 306,000. In 1988, they published another report based on 239 cases with a total cohort of 406,000 cases.[5] Again they showed an increased risk (3.3) in the group at age 30-34, and this risk increased (5.8) with parity of one at the time of diagnosis. There was a trend, although not significant, of increasing risk with increasing duration of use. They reported no association with the dose or type of estrogen or progesterone in the pill. There was no increased risk in the 35-44 year-old group, so a cohort effect does not explain the results. Unexpectedly low rates in the control group were found, but even when this was accounted for, the risk was increased in this particular group.

The Cancer and Steroid Hormone Study (CASH) is a large, multicenter, population-based study from various areas of the United States, both urban and rural, designed to observe the relationship of oral contraceptives to breast, endometrial and ovarian cancer. Cases of breast, endometrial, and ovarian cancer were gathered between 1980 and 1982. Controls were obtained from random digit dialing. The CASH group has issued several reports on breast cancer over the years, based on 2,945 cases in premenopausal women aged 20-54.[6] This was one of the major studies to refute Pike's findings and allay the fears of both health care providers and the public. The group reported no increased risks for any subgroup, for any duration of use or for any pill type. In 1988 they published another paper based on the same group of patients and controls.[7] They reported an increased risk of breast cancer before age 45 in nulliparous women who had an early menarche (before age 13). Age 13 was chosen empirically because of the appearance of the data. They found increasing risk in this group with increasing duration of use. The relative risk was only 1.3 for 4-7 years of use, rising to 2.7 for 8-11 years of use, and 11.8 for greater than 12 years of use. As in their previous report there was no overall increase in risk with oral contraceptive use, and no increase in any other subgroup. They also found that a substantial part of the risk in this select group pertained to the use of Ovulen and Demulen, both of which contain the progestin *ethynodiol doacetate*. The group that is at risk (nulliparous, early menarche, more than eight years of use) is very small and accounts for only 1.3% of the cases of breast cancer in women less than age 45.

Two studies from outside the United States and Great Britain should also be mentioned, one for its positive findings and one for its negative findings. Paul in 1986 reported on 433 cases in New Zealand in a population-based case control study.[8] Cases were obtained from the national cancer registry. Controls were selected at random from the electoral rolls. Paul found no increased risk based on duration of use, age at first use or time since first use. There was also no increased risk for use before age 25 or before first term pregnancy, even with prolonged use. On the other hand, Merik's 1986 study in Sweden and Norway found an increased risk with long-term use in Sweden, but not in Norway.[9] Patients less than 45 years old who had used oral contraceptives for 12 or more years had a relative risk of 2.2. Risk was related to duration of use but not to age at first use or length of use before first term pregnancy. However, length of use before first term pregnancy is correlated to overall length of use.

The latest study from a group in Boston was reported by Miller in 1989.[10] It was based on 407 breast cancer patients between the ages of 25 and 45 from participating hospitals in New York, Philadelphia, Baltimore and Boston. There were 427 hospital controls. Cases were collected between 1983 and 1986. For all groups with less than 10 years of oral contraceptive use, the risk was approximately 2.0, including the groups with less than three months of use. For greater than 10 years of oral contraceptive use, the relative risk was 4.1. Risk was apparent in most subgroups, including younger and older women, and women in both high and low underlying groups. There was no apparent relationship to first term pregnancy, interval since use, or exposure before age 25. In 1984, this same group of investigators, using a different group of patients and controls, reported no increased risk in any subgroup.[11]

Also in 1989, the United Kingdom Case Control Study Group reported on 755 cases of breast cancer in women less than 36 years of age.[22] They used one-to-one matching for controls, with information obtained from patient interviews and corroborated by general practitioner notes and family planning clinic records. The relative risk was 1.43 (95% confidence intervals 0.97 - 2.12) for 49-96 months of use, increasing to 1.75 (1.15 - 2.62) for more than 97 months of use. There was no difference for use before or after first term pregnancy. There was some evidence (although not significant) that pills containing less than 50 mg of estrogen have lower risks.

The final study, published in 1989 by Stanford, reported from the Breast Cancer Detection Demonstration Project.[23] In this study, 2,022 cases and 2,183 controls were recruited from a multicenter screening program between 1973 and 1975. The investigators found no overall increased risk for oral contraceptive users for use before age 25 or prior to first term birth. However, they had small numbers of long-term users at a young age.

It has been difficult to reconcile the conflict in results. For each study showing an increased risk in a particular subgroup of women, there are at least several studies of equal or greater merit that show no increased risk. The 1989 Boston study and the United Kingdom case control study are the only ones that have shown an overall increased risk of breast cancer with oral contraceptive use.[10,22] Some of the inconsistencies might be the result of bias introduced by the study methodology or even to chance. As the study populations are broken down into smaller and smaller subsets, and as more and more comparisons are made, there is an increasing likelihood that an association will be made by chance alone.[12]

There can be a number of sources of bias. There may be bias in the selection of the cases or the controls. The study by Pike has been criticized because fewer than 70% of the eligible living cases were included. However, his method of using neighborhood controls has been praised because it may better account for the confounding factor of socioeconomic class. The use of hospital inpatient controls has been criticized from several standpoints. There is the question of whether the contraceptive practices of young hospital inpatients accurately reflect those of the population from which the cases are drawn.[13] There are also questions about whether the disease for which the control patient was admitted is related to breast cancer or to certain contraceptive practices. Some of these concerns have been allayed by comparing the contraceptive practices of the hospital controls to the population at large by comparing data from sources such as national sales figures for oral contraceptives.[14] The random digit dialing method for obtaining controls in the CASH study has been criticized because it does not allow determination of the true extent of control non-response. Both the Scandinavian and New Zealand studies minimized bias by selecting cases and controls from the entire national population.[8,9]

There are a number of ways for information bias to enter the studies. Contraceptive histories may be inaccurate. Most women will be able to accurately state whether or not they have ever taken oral contraceptives. Accurate timing of when the contraceptive was taken and for how long, especially in the distant past, is much less assured. Accurate information on which pill was taken may also be difficult to obtain. Women who have taken pills for a long time may have been on multiple preparations, and accurate information on the timing and duration of the use of the different pills is probably impossible to obtain. Very few of the studies tried to confirm information on pill use with outside sources. This has been done in other studies, comparing pill use with other diseases, and it has been found that oral contraceptive histories were more accurate in cases than in controls. Patient histories are usually more accurate than physician records,[15] but comparing the two may relieve some of the concern about recall bias. There may also be bias in the oral contraceptive use histories of cases because patients with serious illness give more careful consideration to their history in an effort to find out what caused their disease. This is especially true as more publicity and public anxiety develops over a possible link between the pill and breast cancer.

Recall bias is more likely to be a problem if the patient knows the hypothesis that is being investigated, as was the case in the Scandinavian study.[9] There can also be problems if the interviewer knows which patients are cases and which are controls, and then questions the cases more thoroughly. There was an attempt to overcome this in the New Zealand study.[8] Interviewers were blinded initially as to the identity of cases and controls, and the questions on contraceptive history were asked before the questions on their illness.

Questions of surveillance bias can also be raised. If women taking oral contraceptives are more likely to do breast self-examination, to have their breasts examined by health care providers or have mammography, then surveillance bias may affect results. This happens in several ways. Increased surveillance may lead to an earlier diagnosis. If increased surveillance led to the preferential inclusion of pill users with breast lumps that, although histologically malignant, are biologically benign, it could be argued that these lesions might never otherwise come to attention.[13] There is no good evidence for this, although it has been postulated by Doll and Peto as one reason for a fairly sudden increase in breast cancer in the United States without a concomitant increase in mortality.[16]

Most authorities agree that although chance and bias may be significant in some of the studies, we should seriously look at the positive results, and not dismiss them on this basis. We may be able to explain some of the inconsistencies with better understanding of the biology of breast cancer and oral contraceptive use. There are a number of factors known to increase risk for breast cancer.[17] The disease is more common in upper socioeconomic classes and in urban as opposed to rural areas. The later the age at first term pregnancy, the greater the risk; the earlier the menarche and later the menopause, the greater the risk. Obesity is a risk in postmenopausal women. Family history of breast cancer, especially if premenopausal, or bilateral breast cancer in a first-degree relative increases risk. Large doses of radiation to the chest wall increase risk. Many of these factors are hormonal, so the contention that there may be an association between the synthetic hormones in oral contraceptives and breast cancer is biologically plausible. Biologic plausibility is an important step in determining cause and effect.

Three types of carcinogenic effects are theoretically possible.[18] Oral contraceptives might act as an initiator and transform a normal cell into a cancer cell through mutation of the genome or alteration of its expression. The oral contraceptives might act as a co-initiator by increasing the division rate of breast cells, rendering them more susceptible to chemical, viral or radiation carcinogenesis, all of which require DNA synthesis to establish their genetic alteration. Oral contraceptives might act as a tumor promoter, and promote the growth of already transformed but latent breast cancer cells. The general consensus is that if oral contraceptives increase the risk of breast cancer, it is as a promoter, rather than an initiator or co-initiator. No study has shown that the interval since first pill use, which would indicate latency of carcinogenesis, is related to breast cancer incidence. A number of studies have looked at pill use before first term pregnancy and pill use at an early age. These studies (Pike, McPherson and Merik)[2,3,9] found an increased risk, with gradation of risk according to duration of use before first term pregnancy. However, studies by Paul and Miller, and the CASH study did not find this.[6,8,10] Pike is the only investigator who reported an increased risk with use before age 25.[3] However, use before age 25 and use before first term pregnancy are highly related. If the latent phase is very long, it is possible that not enough time has elapsed since widespread use at early age. Widespread use at young ages occurred earlier in New Zealand[8] and some other countries, but no increased risk has been seen there. Again, it is possible that not enough time has elapsed, and it may be 10 years or more before significant effects are seen.

Many believe that oral contraceptives act as tumor promoters in breast cancer. The belief is based on animal data which show increases in breast cancer from oral contraceptives only in species which already have a fairly high incidence of breast cancer.[18] The chance that cancer cells are present in a woman's breasts increases with age, and with diagnosis of benign breast disease. If pills act as promoters, then an increase should appear in older patients who have taken pills, those with benign breast disease, and those who developed cancer while on the pill or shortly after stopping pill use. Two studies have addressed pill use in older (greater than age 40) women and have found an increased risk.[19,20] Several studies have found an increase in women with a previous history of benign breast disease. Studies of the interval since last use have been inconclusive and mostly negative. If the promoter theory is correct, we should see an increase in the number of young women developing breast cancer and a drop in the number of postmenopausal cancer cases because the women who were destined to develop cancer have done so at an earlier age.[21] The first cohort of women to take pills are now in their late 40s, so the predicted drop in cases would not yet be observable.

Many other biological issues must be addressed. The content of the pill, both the amount and type of hormone, may be important. The 1983 Pike study, which caused a great deal of alarm, associated high potency progestins with increased risk in some subgroups. The method he used to classify progestins has been widely criticized. The CASH study[6] evaluated patients using Pike's progestin classification[2] and found no increased risk.

The timing of exposure may also be a critical factor. It is generally thought that the breast is not fully developed until the end of the first term pregnancy. During the adolescent years the breast undergoes many changes. There may be a critical time during development that oral contraceptive exposure increases the risk of breast cancer. As mentioned before, there have been contradictory results when these groups of women have been studied.

Dose-response relationship is important in showing a causal relationship. Duration of use may also be important. The studies by Merik, Pike, McPherson, and Miller and the United Kingdom case control study showed increasing risk with increasing duration of use, either overall or within certain subgroups of patients.

What possible conclusions could one draw from all these studies? The first possibility is that oral contraceptives do not increase the risk of breast cancer, and that the studies that show risk are flawed by bias in conduct of the study or by chance. This conclusion can certainly be supported by the majority of studies to date. A second possibility is that the pill does cause an overall increase in the risk of breast cancer and that studies showing no effect are defective from bias or chance, or we have not observed a long enough latent period for the effect to become evident. The third possibility is that oral contraceptives do increase the risk of breast cancer, but only under very specific circumstances related to duration of use, timing of use, latent interval, component formulation, or characteristics of the user.[10] The inconsistencies of the results of the various studies are not readily explained. This makes it difficult for health care providers to counsel patients, and difficult for patients to make informed decisions regarding use. We hope future well-designed studies will be able to resolve some of the issues.

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The Authors

JOHN W. GAY, M.D.
MICHAEL S. CARDWELL, M.D.

Dr. Gay and Dr. Cardwell are both assistant professors in the Department of Obstetrics and Gynecology at the University of Missouri School of Medicine, Columbia, Missouri.

Reprints

John W. Gay, M.D.
Department of Obstetrics-Gynecology
N623 Health Sciences Center
University of Missouri-Columbia
1 Hospital Drive
Columbia, MO 65212

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3 **Update in Psychiatry** — Location: St. John's Mercy Medical Center, von Gontard Conference Center, St. Louis, MO. Contact: Judith L. O'Guin, St. John's Mercy Medical Center, 615 S. New Ballas Road, St. Louis, MO 63141-8221. 314/569-6290.

5 - 6 **3rd Annual Alumni Weekend** — Location: CME Auditorium, MA217, University of Missouri School of Medicine, Columbia, MO. Contact: Barry Kling, Office of Continuing Education, MA215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

5 - 7 **Ozark Chest Conference X: Pulmonary Fibrosis, Pulmonary Rehabilitation and Nocturnal Ventilation** — Location: Tan-Tar-A Resort Hotel, Lake of the Ozarks, MO. Contact: American Lung Association of Western Missouri, 2007 Broadway, Kansas City, MO 64108. 816/842-5242.

6 **Plastic Techniques in Suturing** — Location: Omni International Hotel, Orlando, FL. Contact: Kay Harris, P.O. Box 62682, 141 Business Park Dr., Virginia Beach, VA 23462. 804/473-2443.

7 - 11 **Emergency Medicine Written and Oral Boards: Intensive Review Course** — Location: Ritz Carlton Hotel, St. Louis, MO. Contact: St. Louis University School of Medicine, CME Office, 1402 S. Grand, St. Louis, MO 63104. 1-800-553-2712.

8 **City-Wide Radiology Conference: MRI of the Knee - Present and Future** — Location: Mallinckrodt Institute of Radiology, Washington University School of Medicine, St. Louis, MO. Contact: R. Gilbert Jost, M.D., Chief of Diagnostic Radiology, Mallinckrodt Institute of Radiology, 510 S. Kingshighway, St. Louis, MO 63110. 314/362-7130.

9 -11 **Introduction to Doppler Echocardiography** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: St. Louis University CME Office, 1402 S. Grand Blvd., St. Louis, MO 63104-1083. 1-800-5532712.

9 -11 **Pediatric Advanced Cardiac & Trauma Support For Life and Pediatric Advanced Life Support (PACTS/PALS)** — Location: Cardinal Glennon Children's Hospital, St. Louis, MO. Contact: St. Louis University School of Medicine, CME Office, 1402 S. Grand, St. Louis, MO 63104. 1-800-553-2712.

12 - 13 **Advanced Trauma Life Support Provider Course** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: St. Louis University CME Office, 1402 S. Grand Blvd., St. Louis, MO 63104-1083. 1-800-553-2712.

13 **Plastic Techniques in Suturing** — Location: The Ritz-Carlton, Buckhead, Atlanta, GA. Contact: Kay Harris, P.O. Box 62682, 141 Business Park Dr., Virginia Beach, VA 23462. 804/473-2443.

19 - 21 **Missouri Chapter of American College of Physicians and Missouri Society of Internal Medicine, Regional Meeting** — Location: Lodge of the Four Seasons, Lake Ozark, MO. Contact: Mary Ann Morris, P.O. Box 1953, Lee's Summit, MO 64063. 816/525-5800.

25 **Oncology Update: New Perspectives in Cancer Management** — Location: St. Luke's Hospital Institute for Health Education, Emerson Auditorium, Chesterfield, MO. Contact: Carol Broemmer, 222 South Woods Mill Road, Suite 350 North, Chesterfield, MO 63017. 314/851-6006.

26 - 27 **Black Health Care** — Location: Allis Plaza Hotel, Kansas City, MO. Contact: Barry Kling, University of Missouri-Columbia School of Medicine, Office of Continuing Education, MA215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

26 - 27 **Endoscopic & Laser Surgery: Advances Complications and Controversies** — Location: St. Luke's Hospital, St. Louis, MO. Contact: Patty Fogerty, Program Coordinator, Dept. of Education, St. Luke's Hospital Institute for Health Education, 232 South Woods Mill Road, St. Louis, MO 63017. 314/851-6006.

28 **Nucleus Accumbens: An Opening Blossom** — Location: St. Louis University, Margaret McCormick Doisy Learning Resources Center, St. Louis, MO. Contact: St. Louis University School of Medicine, CME Office, 1402 S. Grand Blvd., St. Louis, MO 63104. 1-800-553-2712.

29 **Conference on Insomnia for the Primary Care Physician** — Location: Ritz-Carlton Hotel, St. Louis, MO. Contact: Sleep Disorders Center, Deaconess Hospital, 6150 Oakland Ave., St. Louis, MO 63139. 314/768-3100.

November

1 - 3 **68th Annual Fall Conference** — Location: Ritz-Carlton Hotel, Kansas City, MO. Contact: Linda F. Smutz, Kansas City Southwest Clinical Society, 7920 Ward Parkway, Suite 205, Kansas City, MO 64114. 816/523-3383.

1 - 3 **Clinical Allergy for the Practicing Physician** — Location: Ritz-Carlton Hotel, St. Louis, MO. Contact: Cathy Caruso, Office of Continuing Medical Education, Washington University School of Medicine, 660 S. Euclid, Box 8063, St. Louis, MO 63110. 314/325-9862 or 314/362-6893.

2 **Induction of Ovulation** — Location: St. John's Mercy Medical Center, von Gontard Conference Center, St. Louis, MO. Contact: Bev Wellman, St. John's Mercy Medical Center, 615 S. New Ballas Rd., St. Louis, MO 63141. 1-800-283-8088.

2 - 4 **Microsurgery of the Lumbar & Cervical Spine** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: St. Louis University CME Office, 1402 S. Grand Blvd., St. Louis MO 63104-1083. 1-800-553-2712.

5 - 7 **Microsurgical Approaches to Meningiomas and Other Skull Base Tumors** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: St. Louis University CME Office, 1402 S. Grand Blvd., St. Louis, MO 63104-1083. 1-800-553-2712.

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7 - 9 **Internationalization of Rehabilitation** — Location: Sheraton Plaza Hotel, St. Louis, MO. Contact: St. Louis University School of Medicine, CME Office, 1402 S. Grand Blvd., St. Louis, MO 63104. 1-800-553-2712.

8 - 10 **Pediatrics Advanced Cardiac & Trauma Life Support for Life and Pediatric Advanced Life Support (PACTS/PALS)** — Location: Cardinal Glennon Children's Hospital, St. Louis, MO. Contact: St. Louis University CME Office, 1402 S. Grand Blvd., St. Louis, MO 63104-1083. 1-800-553-2712.

9 - 10 **OB-GYN Update** — Location: Holiday Inn Executive Center, Columbia, MO. Contact: Barry Kling, University of Missouri-Columbia School of Medicine, Office of Continuing Education, MA215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

9 - 11 **16th Annual Symposium: Anesthesia and the Geriatric Patient** — Location: Marriott Pavilion Hotel, One Broadway, St. Louis, MO. Contact: S. Mark Poler, M.D., Geriatric Symposium, Dept. of Anesthesiology, Box 8054, Washington University School of Medicine, 660 S. Euclid, St. Louis, MO 63110. 314/362-6973.

10 **Plastic Techniques in Suturing** — Location: Clarion Hotel, San Francisco Airport, San Francisco, CA. Contact: Kay Harris, P.O. Box 62682, 141 Business Park Dr., Virginia Beach, VA 23462. 804/473-2443.

12 **City-Wide Radiology Conference** — Location: Mallinckrodt Institute of Radiology, St. Louis, MO. Contact: R. Gilbert Jost, M.D., Chief of Diagnostic Radiology, Mallinckrodt Institute of Radiology, 510 S. Kingshighway, St. Louis, MO 63110. 314/362-7130.

13 - 15 **Introduction to Doppler Echocardiography** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: St. Louis University CME Office, 1402 S. Grand Blvd., St. Louis, MO 63104-1083. 1-800-553-2712.

16 **The Effect of Sexual Abuse on Body Image** — Location: St. John's Mercy Medical Center, von Gontard Conference Center, St. Louis, MO. Contact: Judith L. O'Guin, St. John's Mercy Medical Center, CME Office, 615 S. New Ballas Rd., St. Louis, MO 63141. 314/569-6290.

17 **Plastic Techniques in Suturing** — Location: Adam's Mark Hotel, St. Louis, MO. Contact: Kay Harris, P.O. Box 62682, 141 Business Park Drive, Virginia Beach, VA 23462. 804/473-2443.

25 - 28 **Clinical Allergy — Inhalant and Food Sensitivity "Review and How-To"** — Location: Ritz-Carlton Hotel, Kansas City, MO. Contact: James W. Willoughby, M.D., Director, Missouri Postgraduate Course in Allergy, Inc., Suite A, 24-26 South Main Street, Liberty, MO 64068. 816/781-0902.

30 - Dec. 1 **A Framework for Family Therapy Presented by Sal Minuchin** — Location: St. John's Mercy Medical Center, von Gontard Conference Center, St. Louis, MO. Contact: St. John's Mercy Medical Center, 615 S. New Ballas Rd., St. Louis, MO 63141. 314/569-6290.

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December

1 **Plastic Techniques in Suturing** — Location: Adam's Mark Hotel, Charlotte, NC. Contact: Kay Harris, P.O. Box 62682, 141 Business Park Drive, Virginia Beach, VA 23462. 804/473-2443.

4 - 5 **Transesophageal Echocardiography Course** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: St. Louis University CME Office, 1402 S. Grand Blvd., St. Louis, MO 63104. 1-800-533-2712.

7 - 8 **A Practical Guide to Treating Epilepsy - Medically and Surgically** — Location: To be announced. Contact: St. Louis University School of Medicine, CME Office, 1402 S. Grand Blvd., St. Louis, MO 63104. 1-800-533-2712.

8 **Plastic Techniques in Suturing** — Location: The Westin William Penn, Pittsburgh, PA. Contact: Kay Harris, P.O. Box 62682, 141 Business Park Drive, Virginia Beach, VA 23482. 804/473-2443.

10 **City-Wide Radiology Conference: Color Flow Doppler - Update 1990** — Location: Mallinckrodt Institute of Radiology, St. Louis, MO. Contact: R. Gilbert Jost, M.D., Chief of Diagnostic Radiology, Mallinckrodt Institute of Radiology, 510 S. Kingshighway, St. Louis, MO 63110. 314/362-7130.

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January

5 - 10 **Rheumatology for the Practicing Physician** — Location: Keystone Resort, Colorado. Contact: Cathy Caruso, CME Office, Washington University School of Medicine, 660 S. Euclid, Box 8063, St. Louis, MO 63110. 1-800-325-9862 or 314/362-6893.

14 **City-Wide Radiology Conference** — Location: St. Louis University, St. Louis, MO. Contact: R. Gilbert Jost, M.D., Director, Chief of Diagnostic Radiology, Mallinckrodt Institute of Radiology, 510 S. Kingshighway, St. Louis, MO 63110. 314/362-7130.

18 - 19 **Advanced Trauma Life Support Provider Course** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: St. Louis University CME Office, 1402 S. Grand Blvd., St. Louis, MO 63104. 1-800-553-2712.

February

11 **5th Annual Daniel R. Biello Memorial Lecture** — Location: Mallinckrodt Institute of Radiology, St. Louis, MO. Contact: R. Gilbert Jost, Chief of Diagnostic Radiology, Mallinckrodt Institute of Radiology, 510 S. Kingshighway, St. Louis, MO 63110. 314/362-7130.

21 - 22 **Advanced Cardiac Life Support Course** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: St. Louis University CME Office, 1402 S. Grand Blvd., St. Louis, MO 63104. 1-800-553-2712.

21 - 24 **Rhinoplasty** — Location: To be announced. Contact: Cathy Caruso, CME Office, Washington University School of Medicine, 660 S. Euclid, Box 8063, St. Louis, MO 63110. 1-800-325-9862 or 314/362-6893.

March

11 **City-Wide Radiology Conference: Fundamental Observations in Chest Radiology** — Location: Mallinckrodt Institute of Radiology, St. Louis, MO. Contact: R. Gilbert Jost, M.D., Chief of Diagnostic Radiology, Mallinckrodt Institute of Radiology, 510 S. Kingshighway, St. Louis, MO 63110. 314/362-7130.

8 - 9 **4th Annual Contact Lens Course** — Location: Washington University Medical Center, St. Louis, MO. Contact: Cathy Caruso, Washington University School of Medicine, CME Office, 660 S. Euclid, Box 8063, St. Louis, MO 63110. 1-800-325-9862 or 314/362-6893.

8 - 9 **Advanced Trauma Life Support Provider Course** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: St. Louis University School of Medicine, CME Office, 1402 S. Grand Blvd., St. Louis, MO 63104. 1-800-553-2712.

22 **Ninth Annual Symposium on Geriatric Medicine** — Location: Breckinridge Frontenac Inn, St. Louis, MO. Contact: St. Louis University School of Medicine, CME Office, 1402 S. Grand Blvd., St. Louis, MO 63104. 1-800-553-2712.

April

8 **Leroy Sante Lecture** — Location: St. Louis University, St. Louis, MO. Contact: R. Gilbert Jost, M.D., Chief of Diagnostic Radiology, Mallinckrodt Institute of Radiology, 510 S. Kingshighway, St. Louis, MO 63110. 314/362-7130.

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Medical School News

St. Louis University

Thomas C. Westfall, Ph.D., professor and chairman of the department of pharmacology, has received two, five-year training grants totalling more than $1 million.

The first award is a renewal grant titled, "Graduate Training in Neuropharmacology." The award will be used to train two predoctoral and four postdoctoral trainees. This grant will support research allowing students to concentrate on multi-disciplinary skills and work in collaboration with other researchers. Thirteen faculty members from the departments of pharmacology, anatomy and neurobiology, and biochemistry will provide expertise in the training of these students.

The second grant is titled, "Pharmacological Science Research Training Grant." This multi-disciplinary award will be used to train predoctoral students in the area of pharmacological sciences. Twenty-eight faculty members from pharmacology, anatomy and neurobiology, microbiology, biochemistry and physiology were recruited to assist and support the students' efforts. The program is designed around cellular communication and control of the endocrine, cardiovascular and nervous systems.

George T. Grossberg, M.D., associate professor of psychiatry and human behavior and director of the division of geriatric psychiatry, has received a one-year, $107,880 grant from Merck, Sharp and Dohme Research Laboratories. The grant will support research to study the efficacy and safety of a new experimental drug for people suffering from schizophrenia.

George Grossberg, M.D.

According to Dr. Grossberg, schizophrenia is the most common debilitating psychiatric disorder in the United States. He said millions of Americans suffer from the problems and complications of schizophrenia because the drugs available cause uncomfortable side effects.

Rodney M. Coe, Ph.D., professor and chairman of the department of community medicine, has been awarded a one-year, $5,763 grant from the National Institute on Aging. The grant was used to support presentations at the Ninth Annual Symposium on Geriatrics and Gerontology, titled "Memory Function in Aging and Aging-Related Disorders," held in St. Louis.

Rodney M. Coe, Ph.D.

The focus of the two-day symposium was to review new information on basic research on memory and its application of treatment for the elderly. Researchers from across the country presented the latest results of studies on memory function in aging and aging-related disorders. The material discussed will be published by Springer Publishing Company, New York. The symposium is jointly sponsored by St. Louis University Schools of Medicine and Nursing, St. Louis Department of Veterans Affairs Medical Center, St. Louis College of Pharmacy and SSM Rehabilitation Institution.

Prostate cancer has become the most common type of cancer and the second leading cause of cancer death in American men. Because of the large number of men affected by cancer and other prostatic problems, the division of urology at St. Louis University School of Medicine is now operating a new Prostate Center. The center is the only one of its kind in the region and offers state-of-the art technology to patients with all types of prostatic disorders. The director of the center is **Raul O. Parra, M.D.**, associate professor of surgery and director of the division of urology.

"Work Out, Breathe Right" is the name of a new dynamic exercise program at St. Louis University Medical Center specifically tailored to meet the needs of asthmatics. The program teaches participants how to properly workout and breathe right to improve asthma control as well as cardiovascular fitness. Medically-supervised exercise classes are offered along with educational lectures on such topics as nutrition and stress.

The program was developed by the division of allergy and immunology at St. Louis University School of Medicine. **Ellen L. Garibaldi, M.D.**, assistant professor of internal medicine, is the program director.

Raymond G. Slavin, M.D., professor and chairman of the division of allergy and immunology at St. Louis University School of Medicine, said the comprehensive program should be of great benefit to the substantial number of patients who are inhibited from full participation at work and play because of exercise-induced asthma.

The "Work Out, Breathe Right" program will be located on the campus of St. Louis University Medical Center in the new Spine/Hand/Rehabilitation Center.

St. Louis University recently sponsored a program designed to introduce teenagers to the world of science and medicine by offering hands-on training through "Summer Enrichment in the Medical Sciences."

Nine students from various St. Louis high schools were kept busy in anatomy labs, learning how to take blood pressure readings and practicing basic skills required of physicians. The program, now in its second year, aims to expose students to a medical atmosphere and to introduce them to skills that would be useful in any field.

Mike Farrell and Robert Jacobsen, second-year medical students at St. Louis University School of Medicine and co-instructors of the program, said the students have responded very well to the program, showing much enthusiasm and asking many questions.

The free program was started in 1989 when a group of concerned medical students expressed a desire to help increase the number of teens interested in the field of medicine. They wanted to especially target women and blacks, groups especially underrepresented in the field. The program has already doubled, and the outlook for the future is bright, with 15 students slated for participation in 1991. In addition, follow-up studies are being conducted to see what fields the students actually study.

University of Missouri-Columbia

■ Improving long-term health care for the rural elderly is the impetus behind a $120,000 grant awarded to MU's department of family and community medicine.

Chairman and professor **Jack Colwill, M.D.,** and associate professor **Steven C. Zweig, M.D.,** will lead the program, which may develop into a center for rural health.

The project, funded by the Pew Charitable Trust through the Health of the Public Program, identifies a severely underserved population in rural nursing homes and the physicians who are struggling to provide them with adequate health care. The award will help fund the development of a consortium of medical directors of rural nursing homes and faculty throughout the School of Medicine to identify, analyze and find solutions for problems. The program will serve as a cooperative model for mobilizing the resources of the school to address the health problems of rural Missourians.

Willam C. Allen, M.D.

Robert Blake, Jr., M.D.

■ An endowed professorship has been established in MU's department of family and community medicine to honor professor emeritus **William C. Allen, M.D.** Its first holder will be **Robert L. Blake, Jr., M.D.,** who also is director of the family medicine academic fellowship program.

Funding for the professorship was donated by alumni of the School of Medicine and family medicine residency program to recognize Allen's long-term contributions to the department and the school and to organized medicine in Missouri. Allen, who retired three years ago, joined the University in 1962 and has served as director of the family medicine preceptorship program and as special assistant to the dean. The recipient of many national and state awards, he has been active in supporting family medicine in Missouri, including promoting legislation to recruit physicians for rural areas.

The presentation also recognizes Blake's achievements as a teacher and clinician. Blake has received the *Weatherby Award*, presented annually by the North American Primary Care Research Group and the Society of Teachers of Family Medicine to an outstanding family medicine academic researcher. He serves as associate editor of *Family Medicine*, the journal of the Society of Teachers of Family Medicine.

■ Two associate professors in the division of immunology and rheumatology have been awarded nearly $300,000 in Merit Review research grants from the Veterans Administration's Department of Veterans Affairs. **W. Andrew Simpson, Ph.D.,** a V.A. associate investigator, will use his three-year grant for more than $150,000 to conduct research into bacterial endocarditis. Associate professor **Gordon Christensen, M.D.,** received a three-year grant for more than $135,000 to study "Characterization of Slime Associated Antigen." He recently presented results of research on the subject to the American Society for Microbiology in Anaheim, California, at the group's annual meeting. Both are staff members at Harry S. Truman Memorial Veterans Hospital in Columbia.

■ **Leonard R. Forter, Ph.D.,** professor of pharmacology, recently spent six months in Australia researching the evolutionary aspects of the gene for parathyroid hormone-related peptide in vertebrates. He also collected samples of epithelial tissues from native marsupial species. He presented invited lectures in Melbourne at Melbourne University and to the Victorian Endocrine Society at the Howard Florey Institute.

■ **Robert Hoffman, D.O.,** assistant professor of immunology and rheumatology, recently made a presentation at the meeting of the American Association of Immunologists in New Orleans.

■ **Fifi Ahmad Oldfield, Ph.D.,** research assistant professor of pharmacology, was the primary author of a paper presented recently at the 5th Congress of the International Society for Biomedical Research on Alcoholism at the University of Toronto.

■ **Shivendra D. Shukla, Ph.D.,** associate professor of pharmacology, presented a talk recently in the 11th International Congress of Pharmacology's satellite symposium on "Advances in Platelet Activating Factor Research" held at the Pasteur Institute in Paris, France.

■ **Albert Y. Sun, Ph.D.,** research professor of pharmacology, and **Pat Wixom, Ph.D.,** research associate, presented a paper on their research into ethanol ingestion by miniature swine at the recent 5th Congress of the International Society for Biomedical Research on Alcoholism held at the University of Toronto.

■ **Sara Walker, M.D.**, professor of immunology and rheumatology, is the recipient of the *1990 Humanitarian Award* from the Midland Empire Arthritis Center. The award was presented to her September 15 at a dinner and dance benefit in St. Joseph.

■ Five researchers in the division of nephrology made a combined 48 presentations at recent conferences in Japan and Taiwan. Presenters were: **Karl D. Nolph, M.D.**, professor and director; **Zbylut Twardoswski, M.D.**, professor; **John Van Stone, M.D.**, professor; **Ramesh Khanna, M.D.**, associate professor; and **Barbara Prowant**, research associate. Many of the presentations were given at the 11th International Congress of Nephrology in Tokyo and the 5th Congress of the International Society for Peritoneal Dialysis in Kyoto, Japan.

■ Five family and community medicine faculty members were contributors at the recent 18th annual meeting of the North American Primary Care Research Group in Denver. They are: **John G. Bertolino, M.D., Robert L. Blake, M.D., Jorge Rangel, M.D., Michael N. Stiffman, M.D.**, and **Daniel Vinson, M.D.** Also at the meeting, a graduating MU medical student earned first prize in the competition for student presentations, and participants in the academic family medicine fellowship program received the second, third and fourth prizes in the national competition for fellows.

■ The division of general international medicine has two new assistant professors of clinical medicine. **Geetha Reddy, M.D.**, earned her degree at the Medical College of India. She completed her residency in internal medicine at Coney Island Hospital in Brooklyn, N.Y., and at Michael Reese Hospital in Chicago, where she later was a fellow in rheumatology. **Basanti Mukerji, M.D.**, graduated from the Calcutta Medical College in India. She completed an internal medicine residency at St. Joseph Hospital in Chicago and a fellowship in immunology and rheumatology at MU.

■ Three new assistant professors have been appointed by the department of family and community medicine. **Ann L. Grunwald, M.D.**, graduated from the University of Wisconsin School of Medicine, where she also completed a family medicine residency. She will practice at the University satellite clinic in Fayette. Grunwald previously was in group private practice in Rockford, Illinois, and Prairie du Chien, Wisconsin. **Mark Grunwald, M.D.**, also will practice in Fayette. He earned his medical degree at the University of Wisconsin. He previously was a faculty member at the University of Illinois College of Medicine and had been in private practice in Wisconsin. **Daniel C. Vinson, M.D.**, recently completed MU's academic family medicine program and will direct the department's preceptorship program. He is a graduate of the University of North Carolina School of Medicine and the North Carolina Memorial family medicine residency program. He previously was in a group practice in Banner Elk, N.C.

University of Missouri-Kansas City

■ Dean **James J. Mongan, M.D.**, was featured in the June 20 issue of *Hospitals*, a magazine for health care executives. A portrait of Dr. Morgan appeared on the cover, and he was interviewed about the role chief executive officers play in influencing health policy legislation. Dr. Mongan is executive director of Truman Medical Center, the UMKC School of Medicine's primary teaching hospital.

Dr. Mongan also was appointed recently to two national positions. He will serve on the Pew Health Professions Commission and the Veteran's Administration Commission on the Future Structure of Veterans Health Care. The Pew commission will challenge health professions schools in the United States to develop missions and programs that are more responsive to the nation's changing health care needs. The VA commission will review the structure of the VA medical system and determine ways VA health care facilities can meet the future needs of veterans.

■ **E. Grey Dimond, M.D.**, provost for the health sciences emeritus, was one of the first two recipients of the highest award given in the University of Missouri system. Board of Curators President **Eva Frazier, M.D.**, a 1981 UMKC School of Medicine graduate, presented Dr. Dimond with the *Curators' Award for Outstanding Service* at a dinner August 2 at Diastole, Dr. Dimond's home. University officials emphasized Dr. Dimond's peripheral vision in conceptualizing the unique medical program at UMKC and his personal commitment to the university as evidenced through the future donation of his home to be used as an international scholars center. They also noted his global perspective in many other contributions to the university, including the establishment of the Edgar Snow Memorial Fund, Inc., founded by his late wife. The constituent organization supports the campus and is building a resource library on recent Chinese history. It also assists lecturers for the Edgar Snow Professorship.

■ **Lee Willoughby**, director of Evaluation and Computer Resources, and **Alice Bixby**, computer programmer, attended the 16th International Association for Educational Assessment International Conference in June at Maastricht, The Netherlands. University officials from 40 countries participated in the exchange of information. The UMKC School of Medicine was one of the few United States schools represented. Last December, Willoughy submitted a paper for acceptance to the conference. It described the medical school's Quarterly Profile Examination (QPE), summarized its results, and proposed an extension of the longitudinal concept in secondary schools.

Earlier during the summer, the UMKC School of Medicine hosted faculty from the medical school at the University of Limburg, Maastricht, who administer a longitudinal test similar to the QPE called the

Progress Test. An outcome of the meeting was an agreement between the schools' faculty to work together to promote their unique method of longitudinal testing. Both universities gave well-received presentations at the international conference.

Washington University

Carl D. Rhodes, Jr., Ph.D., has been named associate dean for graduate studies at Washington University School of Medicine and associate dean in the graduate school of arts and sciences at Washington University.

The appointment was announced by **William A. Peck, M.D.**, vice chancellor for medical affairs and dean of the School of Medicine.

Rhodes returns to St. Louis after serving for two years at the University of Texas Southwestern Medical Center in Dallas. There, he was associate dean for the Medical Scientist Training Program and the Graduate School of Biomedical Sciences, and was an associate professor of biochemistry.

In his new capacity, Rhodes will be chief academic administrative officer for the six interdepartmental Ph.D. programs in the Division of Biology and Biomedical Sciences. As such, he will plan curricula, coordinate recruitment and have direct responsibility for admissions into the division programs.

Rhodes has also received two faculty appointments: research professor in biochemistry and molecular biophysics at the School of Medicine and adjunct professor of biology.

Glenda K. Wiman has been named assistant dean for special programs at Washington University School of Medicine in St. Louis. The appointment was announced by **William A. Peck, M.D.**, vice chancellor for medical affairs and dean of the School of Medicine.

In her role, Wiman will have responsibility for varied and numerous projects. They include: supervise and coordinate the National Council of the medical school; develop continuing medical education programs for regional physicians; plan and implement recruitment and orientation programs for department heads, key administrators, staff, faculty and Board of Trustee members; develop and monitor medical and graduate student recruitment programs; and initiate a liaison program with corporate and community relations. She will continue to have a key role in the Office of Medical Public Affairs for the next year.

For the last three years, Wiman has been executive director of the Office of Medical Public Affairs. She has been with the public affairs staff for 15 years, starting as a staff writer for *Outlook* magazine. She served as coordinator of news and information for three years and was named director of medical public relations in 1981.

Roderick L. McCoy, a second-year medical student at Washington University School of Medicine in St. Louis, has been named the first *Monsanto Scholar* in the newly established Monsanto Scholars-Medical Scientist Training Program for Minority Students.

The award was made possible through a $600,000 gift from the Monsanto Fund, the philanthropic branch of Monsanto Co. It will enable McCoy and students selected in future years to receive paid tuition and a monthly stipend while pursuing combined M.D. and Ph.D. degrees in the rigorous six-year program. Monsanto Scholars will be named annually with the program supporting up to six students at one time.

John L. Mason, Ph.D., president of Monsanto Fund, says the goal behind this unique initiative is to attract outstanding minority students to the existing Medical Scientist Training Program (MSTP) at the School of Medicine and prepare them for a career in research medicine. Students in the program receive M.D., Ph.D. degrees after six years of study, which includes two years of medical school, three years of graduate study and one year of clinical work.

McCoy, the first MSTP student to receive the Monsanto Scholar award, is a graduate of Stanford University where he majored in electrical engineering.

Directed by **Carl Frieden, Ph.D.**, professor of biochemistry and molecular biophysics, the MSTP program began at Washington University in 1968 and is one of 29 nationwide funded by the National Institutes of Health (NIH). The program offers outstanding medical students an opportunity to train as academic physicians with a background in basic research.

Washington University has the largest MSTP in the United States, followed by Johns Hopkins University in Baltimore. Since 1974, 148 students have graduated from the program and almost all have gone on to careers in academic or research institutions. Of the 72 students who have completed their residencies, 62 are full-time faculty members. Twenty-three of those individuals are professors or associate professors, 37 are assistant professors and two are instructors.

The National Institute of Health (NIH) has awarded Washington University's Mallinckrodt Institute of Radiology a $400,000 research grant to study heart disease, especially coronary artery disease and heart muscle function, by enhancing positron emission tomography (PET) images of the heart.

Tom R. Miller, Ph.D., associate professor of radiology at the Mallinckrodt Institute, and his team of researchers will use computers to develop new three-dimensional (3-D) methods of interactive viewing of the heart, to study the effects of slice-spacing in the PET scanners, and to generate images that directly portray blood flow and oxygen utilization.

The Society of Nuclear Medicine (SNM) has awarded **Marcus E. Raichle, M.D.**, professor of radiology and neurology at Washington University's Mallinckrodt Institute, the *Paul C. Aebersold Award for Outstanding Achievement in Basic Science Applied to Nuclear Medicine.*

The SNM Awards Committee honored Dr. Raichle for his success in understanding the human brain in health and disease using nuclear medicine techniques developed by him and his colleagues over the past 20 years.

New Members

■ **Allan D. Callow, M.D.,** Box 8109, 4960 Audubon, St. Louis 63110, has become a member of the Missouri State Medical Association. Dr. Callow received his preliminary education at Tufts University and obtained his medical degree at Harvard Medical School in 1942. He completed his residency at Tufts University, New England Medical Center, Boston, MA. Dr. Callow specializes in vascular surgery.

■ **Rebecca L. Frakes, M.D.,** 3555 Sunset Office Dr., St. Louis 63127, has become a member of the Missouri State Medical Association. Dr. Frakes received her preliminary education at Vanderbilt University and obtained her medical degree at the University of Texas Southwestern Medical School in 1986. She completed her residency at Ohio State University, Columbus, OH. Dr. Frakes specializes in pediatrics and internal medicine.

■ **John W. Hawkins, M.D.,** 1515 W. Truman Road, Suite 602, Independence 64050, has become a member of the Missouri State Medical Association. Dr. Hawkins received his preliminary education at Stanford University and obtained his medical degree at the University of Kansas School of Medicine in 1985. He completed his residency at the University of Kansas Medical Center, Kansas City, KS. Dr. Hawkins specializes in internal medicine and cardiology.

■ **Deborah A. Jantsch, M.D.,** 6420 Prospect, Kansas City 64132, has become a member of the Missouri State Medical Association. Dr. Jantsch received her preliminary education at Kansas University and obtained her medical degree at the Creighton University School of Medicine in 1986. She completed her residency at the University of California-Irvine Medical Center, Orange, CA. Dr. Jantsch specializes in obstetrics and gynecology.

■ **Bruce A. Meyer, M.D.,** 4400 Wornall Road, Kansas City 64111, has become a member of the Missouri State Medical Association. Dr. Meyer received his preliminary education at the University of Texas-Austin and obtained his medical degree at the University of Texas Medical School-San Antonio in 1984. He completed his residency at the University of Texas-Houston, Houston, TX. Dr. Meyer specializes in perinatology.

■ **Tae S. Park, M.D.,** 400 S. Kingshighway, St. Louis 63110, has become a member of the Missouri State Medical Association. Dr. Park received his preliminary education at Yonsei University-Seoul, Korea and obtained his medical degree at the College of Medicine-Yonsei University in 1971. He completed his residency at Columbus Children's Hospital, Columbus, OH. Dr. Park specializes in neurosurgery.

■ **Michael C. Stiles, M.D.,** 2900 Baltimore, Suite 650, Kansas City 64108, has become a member of the Missouri State Medical Association. Dr. Stiles received his preliminary education at the University of Notre Dame and obtained his medical degree at the University of Kansas School of Medicine in 1985. He completed his residency at the University of Kansas School of Medicine, Kansas City, KS. Dr. Stiles specializes in ophthalmology.

■ **Costa Voulgaropoulos, M.D.,** St. Luke's Hospital, Chesterfield 63017, has become a member of the Missouri State Medical Association. Dr. Voulgaropoulos received his preliminary education at Lowell University and obtained his medical degree at the University of Thessaloniki School of Medicine, Greece in 1987. He completed his residency at St. Vincent's of New York, New York, NY. Dr. Voulgaropoulos specializes in pediatrics.

■ **Alan P.K. Wild, M.D.,** 222 S. Woods Mill Road, Chesterfield 63017, has become a member of the Missouri State Medical Association. Dr. Wild received his preliminary education at Tulane University and obtained his medical degree at the Tulane University School of Medicine in 1983. He completed his residency at the Washington University School of Medicine, St. Louis, MO. Dr. Wild specializes in otolaryngology.

■ **Kerri L. Wilks, M.D.,** 2400 Lucy Lee Pkwy., Suite C, Poplar Bluff 63901, has become a member of the Butler-Wayne-Ripley-Carter County Medical Society. Dr. Wilks received her preliminary education at Mills College and obtained her medical degree at the New York Medical College in 1985. She completed her residency at the Albert Einstein College of Medicine, New York, NY. Dr. Wilks specializes in neurology.

■ Resident Members

Richard C. Bell, M.D. — *dermatology*
Carolyn M. Dressler, M.D. — *thoracic surgery*
Mary V. Graham, M.D. — *radiation oncology*

■ Student Members

St. Louis University

Thomas J. Shen
Laird H. Vermont

University of Missouri-Kansas City

Anne W. Davis
Tammy L.M. Heinly
Lisa M. Motley
Frank Patrick
Kathryn Perahoritis
Marion R. Spence
Murray Sullivan
Michael S. Young

In Memoriam

■ **Robert M. Bell, M.D.**, died August 4, 1990 at the age of 89. Dr. Bell, a psychiatrist, practiced medicine in St. Louis where he was an associate professor of clinical psychiatry at Washington University School of Medicine for 35 years. He served on the staffs of Barnes, St. Luke's, Deaconess and Faith hospitals. In 1973, he was co-founder and medical director of the Mark Twain Mental Health Center. He retired from the center in 1982. He obtained his medical degree at the St. Louis University School of Medicine in 1928. Dr. Bell was a member of the Northeast County Medical Society.

■ **Arthur T. Esslinger, M.D.**, died August 20, 1990 at the age of 78. Dr. Esslinger, an obstetrician/gynecologist, practiced medicine in St. Louis for 40 years before retiring in 1977. He was on the staffs of St. Mary's, St. John's, Missouri Baptist, and The Barnard Free Skin and Cancer hospitals. He was an instructor in clinical obstetrics and gynecology at the Washington University School of Medicine and a civilian consultant in obstetrics and gynecology at Fort Leonard Wood Army Hospital. He obtained his medical degree at the Washington University School of Medicine in 1940. Dr. Esslinger was a member of the St. Louis Metropolitan Medical Society.

■ **Lee B. Harrison, M.D.**, died July 12, 1990 at the age of 88. Dr. Harrison, an internist, practiced medicine in St. Louis for 47 years. He was on the staffs of Washington University Medical Center and Barnes Hospital. He retired in 1974 as chief of the medical staff at the old Missouri Pacific Hospital. He obtained his medical degree at the Washington University School of Medicine in 1927. Dr. Harrison was a member of the St. Louis Metropolitan Medical Society.

■ **Jack A. Langevin, M.D.**, died May 31, 1990 at the age of 64. Dr. Langevin, a surgeon, retired from the U.S. Navy as a commander in 1970 after serving 26 years. Following his retirement from the Navy, he practiced in Salem, Arkansas then moved to West Plains in 1972 where he practiced until his retirement from medicine in 1984. He obtained his medical degree at the University of Colorado School of Medicine in 1957. Dr. Langevin was a member of the South Central County Medical Society.

■ **Norman J. Schreiber, M.D.**, died August 12, 1990 at the age of 74. Dr. Schreiber, a general practitioner, practiced medicine in St. Charles for more than 25 years. He moved to Springfield in 1970 where he served eight years as an outcare physician at Southwest Missouri State University. He obtained his medical degree at the Northwestern University School of Medicine in 1938. Dr. Schreiber was a member of the Greene County Medical Society.

Physician's Recognition Awards

Forty MSMA members qualified for the MSMA-AMA Physician's Recognition Award during July 1990. The award, presented by the Missouri State Medical Association and the American Medical Association, is given to those physicians who voluntarily complete 150 credit hours of continuing medical education within a three-year period. Sixty of the credit hours must be earned in Category 1 programs.

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Kenneth L. Rall, *Columbia*

Buchanan

Robert L. Corder, *St. Joseph*

Cape Girardeau

Jonathon K. Foley, *Cape Girardeau*
Melvin C. Kasten, *Cape Girardeau*

Greene

Henry C. Krahn, *Springfield*

Jefferson

James A. Junker, *St. Louis*

Metro Med — Greater Kansas City

Frank E. Baum, *Kansas City*
Joseph H. Brewer, *Kansas City*
Howard J. Ellfeldt, *Kansas City*
Jeffrey O. Emory, *Kansas City*
Robert L. Goolsbee, *Kansas City*
Robert E. Gunnoe, *Kansas City*
Lanny W. Harris, *Kansas City*
Frederick H. Hartwig, *Kansas City*
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C. Laurence Johnson, *Kansas City*
Pierre W. Keitges, *Kansas City*
Gary Leifer, *Kansas City*
David L. Moore, *Kansas City*
Jay T. Peterson, *Kansas City*
Susan S. Porter, *Kansas City*
Richard B. Price, *Kansas City*
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Mid-Missouri

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MSMA Only

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Dean B. Burgess, *St. Louis*
Gordon M. Goldman, *Creve Coeur*
Mark G. Grand, *St. Louis*
Cynthia Z. Kenneally, *St. Louis*
Samuel Krain, *St. Louis*
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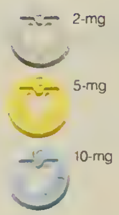
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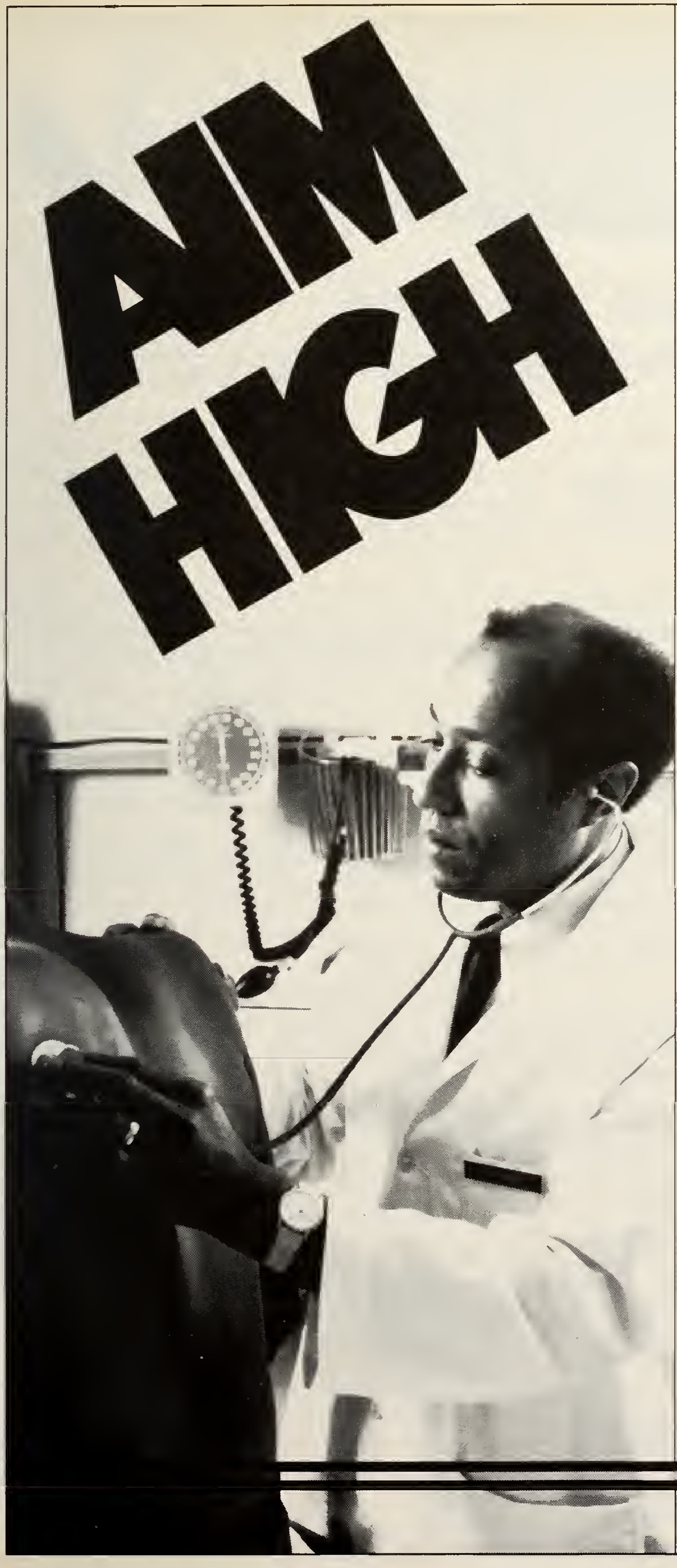

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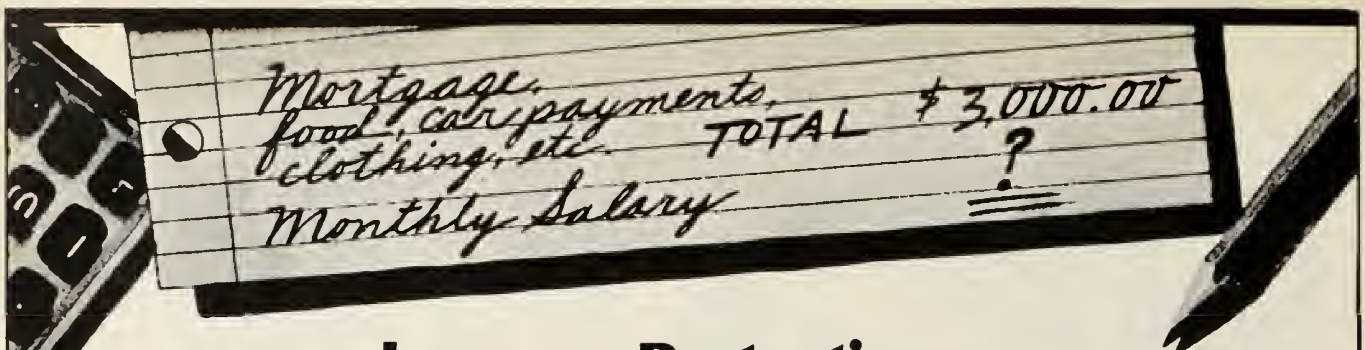

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Final Disciplinary Actions

The following is a listing of final disciplinary actions taken by the State Board of Registration for the Healing Arts. The listing includes actions finalized through May 1990. This information is made available to the public under the provisions of Section 334.101 RSMo.

■ **JOSEPH J. ARINO, D.O.,** *Ridgefield, New Jersey*
Order dated 8/6/90 — Three (3) year suspension retroactive to 8/10/89 — Stayed, Three (3) years probation retroactive to 8/10/89.
Violation: Section 334.100.2 (8), RSMo Supp. 1989.

■ **RICHARD E. BALDWIN, D.O.,** *Davis, Oklahoma*
Order dated 7/27/90 — Two (2) month suspension retroactive to 6/15/89, Twenty-two (22) month suspension retroactive to 8/16/89.
Violation: Section 334.100.2 (8), RSMo Supp. 1989.

■ **OFELIA M. BERNABE, M.D.,** *St. Louis, Missouri*
Order dated 4/30/90 — Five (5) years probation.
Violation: Section 334.100.2 (6)(13)(23), RSMo Supp. 1989.

■ **JEROME J. BERNHARD, D.O.,** *Phoenix, Arizona*
Order dated 8/2/90 — Reprimand.
Violation: Section 334.100.2 (8), RSMo Supp. 1989.

■ **CHARLES R. BIGGS, D.O.,** *Austin, Texas*
Order dated 2/28/90 — Agreement (No surgery or non-surgical invasive procedures).
Violation: Section 334.100.2(8), RSMo Supp. 1989.

■ **GARY E. BODENHAUSEN, M.D.,** *Blue Springs, Missouri*
Order dated 7/5/90 — Three (3) years probation.
Violation: Section 334.100.2 (4h)(13), RSMo Supp. 1989.

■ **BERNARD BRESSLER, M.D.,** *Richmond, Virginia*
Order dated 6/5/90 — Voluntary surrender.
Violation: Section 334.100.2 (8), RSMo Supp. 1989.

■ **LEO D. BRUBAKER, D.O.,** *Muskegon, Michigan*
Order dated 5/21/90 — Voluntary surrender.
Violation: Section 334.100.2 (8), RSMo Supp. 1989.

■ **ANDRES BUSTILLO, M.D.,** *Hialeth, Florida*
Order dated 8/2/90 — Agreement (Must appear before Board before returning to practice in Missouri).
Violation: Section 334.100.2 (8), RSMo Supp. 1988.

■ **GREGORY CALKINS, M.D.,** *Joliet, Illinois*
Order dated 4/10/90 — Revocation of Missouri license.
Violation: Section 334.103, RSMo Supp. 1986.

■ **PHILLIP COMENS, M.D.,** *St. Louis, Missouri*
Order dated 3/7/90 — Five (5) years probation.
Violation: Section 334.100.2(4c)(4h)(5)(6)(22)(23), RSMo Supp. 1987.

■ **RENO COVA, M.D.,** *Chaffee, Missouri*
Order dated 7/15/90 — Six (6) months probation.
Violation: Section 334.100.2 (4o), RSMo Supp. 1988.

■ **MICHAEL H. CREER, M.D.,** *St. Louis, Missouri*
Order dated 1/3/90 — Surrendered controlled substance authority.
Violation: Section 334.100.2(4h)(13)(23), RSMo Supp. 1989.

■ **EDMUND I. CSERNYIK, D.O.,** *Talmadge, Ohio*
Order dated 2/9/90 — Reprimand.
Violation: Section 334.100.2(8), RSMo Supp. 1989.

■ **JAMES W. DAILEY, D.O.,** *Joplin, Missouri*
Order dated 7/6/90 — One (1) day suspension, Three (3) years probation.
Violation: Section 334.100.2 (5)(13), RSMo Supp. 1989.

■ **ARABINDA DAS, M.D.,** *San Diego, California*
Order dated 3/16/90 — Voluntary surrender.
Violation: Section 334.100.2(8)(13)(23), RSMo Supp. 1988.

■ **JOHN J. DELATORRE, M.D.,** *Sullivan, Missouri*
Order dated 7/27/90 — Five (5) years probation.
Violation: Section 334.100.2 (6), RSMo Supp. 1989.

■ **REX W. DINSMORE, D.O.,** *Talmadge, Ohio*
Order dated 2/9/90 — Reprimand.
Violation: Section 334.100.2 (8), RSMo Supp. 1989.

■ **JOHN R. DIXON, M.D.,** *Brookfield, Missouri*
Order dated 3/20/90 — Permanent injunction issued by Linn County Circut Court.

ALBERTO DORIA, M.D., *Hugo, Oklahoma*
Order dated 2/16/90 — Agreement (Must appear before Board before returning to practice in Missouri).
Violation: Section 334.100.2 (4g), RSMo Supp. 1988.

TERRY A. FULLER, M.D., *Clayton, Missouri*
Order dated 7/3/90 — Three (3) years probation.
Violation: Section 334.100.2 (4h)(6)(13)(22)(23), RSMo Supp. 1989.

ROBERT L. FULTON, M.D., *Louisville, Kentucky*
Order dated 1/24/90 — Five (5) years probation while practicing in Missouri.
Violation: Section 334.100.2 (4g), RSMo Supp. 1988.

CALDWELL J. GAFFNEY, M.D., *St. Louis, Missouri*
Order dated 5/24/90 — Three (3) years probation.
Violation: Section 334.100.2 (5)(13), RSMo Supp. 1989.

BRUCE B. GAMBACH, D.O., *Fairfield, Iowa*
Order dated 2/2/90 — Voluntary surrender.
Violation: Section 334.100.2 (8), RSMo Supp. 1987.

LOUIS A. GARY, M.D., *St. Louis, Missouri*
Order dated 8/2/90 — Voluntary surrender for one (1) month.
Violation: Section 334.100.2 (4g)(14), RSMo Supp. 1989.

DONALD W. GROSS, D.O., *Riverdale, Georgia*
Order dated 5/21/90 — Six (6) months suspension.
Violation: Section 334.100.2 (8), RSMo Supp. 1989.

FREDERIC HABERMAN, D.O., *Saddle Brook, New Jersey*
Order dated 1/16/90 — Reprimand.
Violation: Section 334.100.2 (8), RSMo Supp. 1988.

GARY W. HAMLIN, D.O., *Joplin, Missouri*
Order dated 4/18/90 — One (1) month suspension, Five (5) years probation.
Violation: Section 334.100.2 (4d)(4h)(13)(23), RSMo Supp. 1988.

PROCOP HARAMI, D.O., *Paterson, New Jersey*
Order dated 4/30/90 — Reprimand.
Violation: Section 334.100.2 (8), RSMo 1986.

HOMER C. HIATT, M.D., *St. Louis, Missouri*
Order dated 7/27/90 — Five (5) years probation.
Violation: Section 334.100.2 (6), RSMo Supp. 1989.

LAWRENCE R. JACOBS, M.D., *Culverdale, California*
Order dated 4/20/90 — Revocation of Missouri license.
Violation: Section 334.100.2 (8), RSMo 1986.

MARY G. JOSEPH, M.D., *St. Louis, Missouri*
Order dated 4/10/90 — Five (5) years probation.
Violation: Section 334.100.2 (4h), RSMo Supp. 1989.

JAMES J. JUNGELS, D.O., *Macks Creek, Missouri*
Order dated 6/11/90 — Surrendered amphetamine, amphetamine-like controlled substance authority.
Violation: Section 334.100.2 (6)(13), RSMo Supp. 1989.

STEPHEN F. JUSTICE, D.O., *Clarksville, Missouri*
Order dated 1/22/90 — Surrendered controlled substance authority.
Violation: Section 334.100.2 (13), RSMo Supp. 1988; 4 CSR 150-5.010.

JOSEPH H. KENNEDY, M.D., *Sparta, Georgia*
Order dated 6/25/90 — Revocation of Missouri license.
Violation: Section 334.103, RSMo.

JOHN W. KLEMA, III, D.O., *Raytown, Missouri*
Order dated 5/21/90 — One (1) month suspension to begin 6/9/90, Five (5) years probation.
Violation: Section 334.100.2 (4d), RSMo Supp. 1989.

ALYWIN E. KLUTZ, M.D., *St. Louis, Missouri*
Order dated 6/18/90 — Revocation of Missouri license.
Violation: Section 334.103, RSMo.

CHARLES A. LICHTY, M.D., *Shelbina, Missouri*
Order dated 7/27/90 — Surrendered anorectic controlled substance authority for two (2) years or until pharmacology course completed.
Violation: Section 334.100.2 (6), RSMo Supp. 1989.

JACQUELINE LONG, M.D., *Riverside, California*
Order dated 12/18/89 — Two (2) months suspension, Five (5) years probation.
Violation: Section 334.100.2 (4d)(4h)(5)(6)(10)(13), RSMo Supp. 1988.

NAPOLEON MAMINTA, M.D., *Chesterfield, Missouri*
Order dated 12/22/89 — Revocation of Missouri license. Stayed by Administrative Hearing Commission.

DIONISIO F. MARTINEZ, M.D., *Vernon, Texas*
Order dated 6/25/90 — Two (2) week suspension.
Violation: Section 334.100.2 (4h)(4p)(5), RSMo Supp. 1989.

CARTER W. McCORKLE, D.O., *Mineola, Texas*
Order dated 8/2/90 — Agreement (Must appear before Board before returning to practice in Missouri).
Violation: Section 334.100.2 (8), RSMo Supp. 1989.

BERNARD B. MEGAFFIN, M.D., *Powell, Ohio*

Order dated 1/22/90 — Revocation of Missouri license.
Violation: Section 334.100.2 (2)(8), RSMo Supp. 1988.

■ **RICHARD P. MUCIE, D.O.,** *Kansas City, Missouri*
Order dated 5/21/90 — Five (5) years probation retroactive to 3/16/90.
Violation: Section 334.100.2, RSMo Supp. 1989.

■ **JEROME P. MURPHY, M.D.,** *Scottsdale, Arizona*
Order dated 5/21/90 — Agreement (Must appear before Board before returning to practice in Missouri).
Violation: Section 334.100.2 (8), RSMo Supp. 1989.

■ **GUY MUSTALISH, M.D.,** *Ft. Lauderdale, Florida*
Order dated 1/24/90 — Revocation of Missouri license.
Violation: Section 334.100.2 (4o)(4p)(6), RSMo Supp. 1988.

■ **JAMES J. O'DAY, D.O.,** *Wayne, Michigan*
Order dated 12/18/89 — Revocation of Missouri license.
Violation: Section 334.103, RSMo.

■ **DONALD C. OLSON, JR., D.O.,** *Tahlequah, Oklahoma*
Order dated 4/10/90 — Revocation of Missouri license.
Violation: Section 334.103, RSMo 1986.

■ **JEFFREY A. RIESMAN, M.D.,** *Columbia, Missouri*
Order dated 5/4/90 — Voluntary surrender.
Violation: Section 334.100.2 (1)(3)(4g), RSMo Supp. 1989.

■ **MARVIN E. ROSS, D.O.,** *Carrollton, Missouri*
Order dated 7/22/90 — Two (2) week suspension, Five (5) years probation.
Violation: Section 334.100.2, RSMo Supp. 1989.

■ **KARL S. SAFFO, M.D.,** *Shawnee Mission, Kansas*
Order dated 6/7/90 — Agreement (Compliance with Kansas Order).
Violation: Section 334.100.2 (8), RSMo Supp. 1989.

■ **GENE D. SCHMUTZER, D.O.,** *Tucson, Arizona*
Order dated 2/9/90 — Agreement (Must appear before Board before returning to practice in Missouri).
Violation: Section 334.100.2 (8), RSMo Supp. 1989.

■ **HILLARD L. SCOTT, M.D.,** *Normandy, Missouri*
Order dated 7/27/90 — Four (4) week suspension, Three (3) years probation retroactive to 7/1/90.
Violation: Section 334.100.2 (4h), RSMo Supp. 1989.

■ **JOHN D. SELLERS, D.O.,** *Southfield, Michigan*
Order dated 8/6/90 — Agreement (One (1) year of examining room chaperone).
Violation: Section 334.100.2 (8), RSMo Supp. 1989.

■ **PU SHU, M.D.,** *Osawatomie, Kansas*
Order dated 8/2/90 — Reprimand.
Violation: Section 334.100.2, RSMo Supp. 1989.

■ **RUSTICO V. SIMPELO, M.D.,** *Potosi, Missouri*
Order dated 4/16/90 — Five (5) day suspension, Five (5) years probation retroactive to 10/28/88 (To coincide with BNDD probation).
Violation: Section 334.100.2 (23), RSMo Supp. 1989.

■ **WARNER F. STANFORD, D.O.,** *Macon, Georgia*
Order dated 3/22/90 — One (1) year suspension.
Violation: Section 334.100.2 (8), RSMo 1989.

■ **PATRICK R. STOKES, M.D.,** *New Brighton, Minnesota*
Order dated 2/16/90 — Surrendered controlled substance authority.
Violation: Section 334.100.2 (8) (23), RSMo Supp. 1989.

■ **OTTO W. THEEL, JR., M.D.,** *Kansas City, Missouri*
Order dated 2/16/90 — Voluntary surrender.
Violation: Section 334.100.2 (6)(13), RSMo Supp. 1989; 4 CSR 150-5.010.

■ **JAMES M. TOOMEY, M.D.,** *Boston, Massachusetts*
Order dated 8/6/90 — Five (5) years probation.
Violation: Section 334.100.2 (13), RSMo Supp. 1989.

■ **PAIRAT VIBULAKAOPUN, M.D.,** *Bonne Terre, Missouri*
Order dated 1/16/90 — Agreement (Reprimand, Two (2) year amphetamine authority surrender, Attend pharmacology course within one (1) year).
Violation: Section 334.100.2 (6), RSMo.

■ **JACK L. VINYARD, M.D.,** *Joplin, Missouri*
Order dated 7/27/90 — Three (3) years probation.
Violation: Section 334.100.2 (6), RSMo Supp. 1989.

■ **WILLIAM WETZEL, D.O.,** *Carrollton, Missouri*
Order dated 4/30/90 — Two (2) years probation.
Violation: Section 334.100.2 (5)(13), RSMo Supp. 1989.

■ **JOHN M. WILLIAMS, M.D.,** *Liberty, Missouri*
Order dated 6/5/90 — Two (2) years probation.
Violation: Section 334.100.2 (4h), RSMo Supp. 1989.

■ **STEPHEN J. WILLIG, M.D.,** *St. Louis, Missouri*
Order dated 2/24/90 — Voluntary surrender.
Violation: Section 334.100.2 (13)(23), RSMo Supp. 1988.

■ **ROBERT ZELMAN, D.O.,** *St. Louis, Missouri*
Order dated 5/31/90 — Voluntary surrender.
Violation: Section 334.100.2 (4p), RSMo Supp. 1989.

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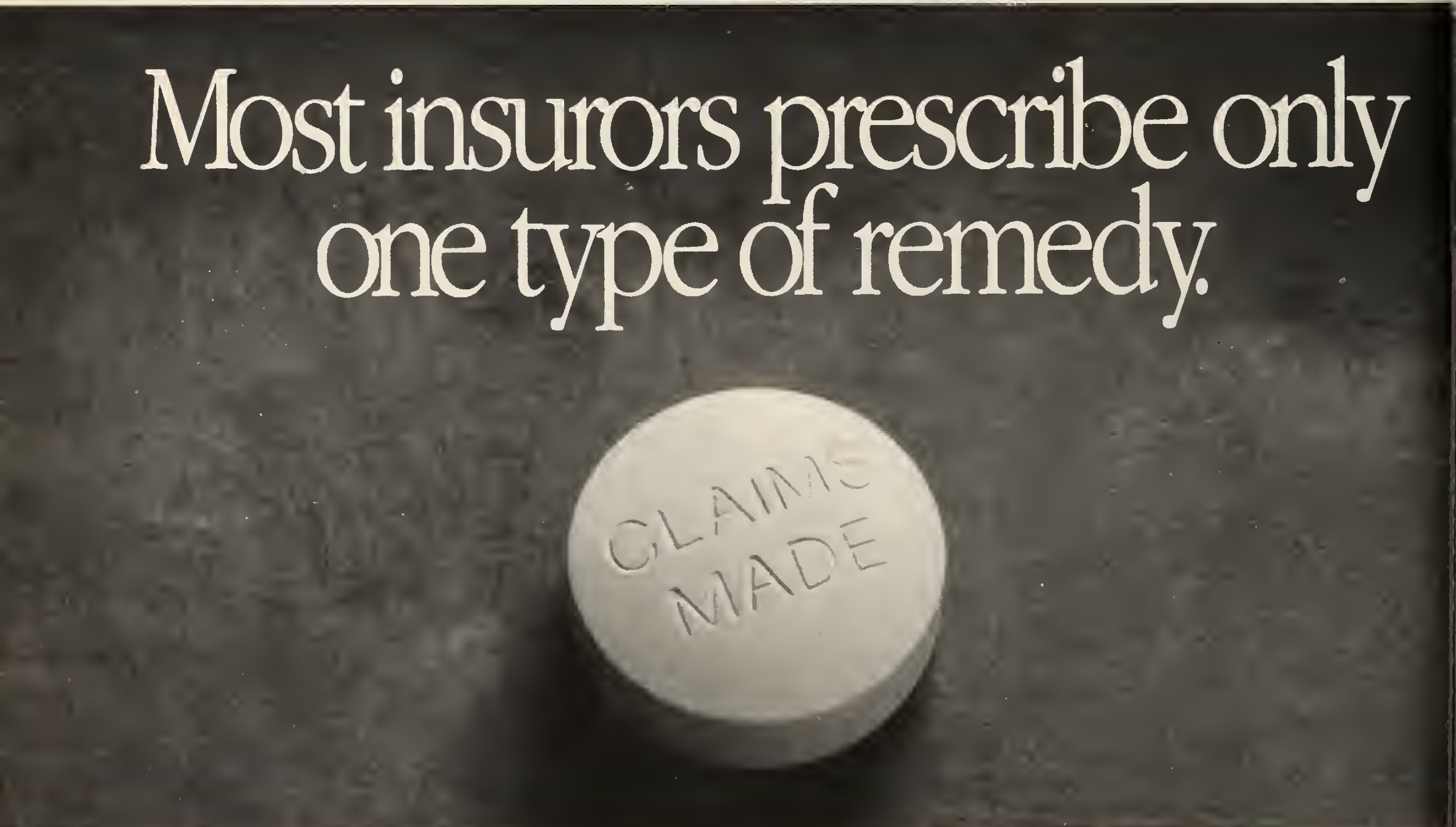

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References
1. *USP DI Update, September/October 1988, p 120.*
2. *Br J Clin Pharmacol 1985;20:710-713.*
3. *Data on file, Lilly Research Laboratories.*
4. *Scand J Gastroenterol 1987;22(suppl 136):61-70.*
5. *Am J Gastroenterol 1989;84:769-774.*

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Precautions: *General*—1. Symptomatic response to nizatidine therapy does not preclude the presence of gastric malignancy.

2. Dosage should be reduced in patients with moderate to severe renal insufficiency.

3. In patients with normal renal function and uncomplicated hepatic dysfunction, the disposition of nizatidine is similar to that in normal subjects.

Laboratory Tests—False-positive tests for urobilinogen with Multistix® may occur during therapy.

Drug Interactions—No interactions have been observed with theophylline, chlordiazepoxide, lorazepam, lidocaine, phenytoin, and warfarin. Axid does not inhibit the cytochrome P-450 enzyme system; therefore, drug interactions mediated by inhibition of hepatic metabolism are not expected to occur. In patients given very high doses (3,900 mg) of aspirin daily, increased serum salicylate levels were seen when nizatidine, 150 mg b.i.d., was administered concurrently.

Carcinogenesis, Mutagenesis, Impairment of Fertility—A two-year oral carcinogenicity study in rats with doses as high as 500 mg/kg/day (about 80 times the recommended daily therapeutic dose) showed no evidence of a carcinogenic effect. There was a dose-related increase in the density of enterochromaffin-like (ECL) cells in the gastric oxyntic mucosa. In a two-year study in mice, there was no evidence of a carcinogenic effect in male mice, although hyperplastic nodules of the liver were increased in the high-dose males as compared with placebo. Female mice given the high dose of Axid (2,000 mg/kg/day, about 330 times the human dose) showed marginally statistically significant increases in hepatic carcinoma and hepatic nodular hyperplasia with no numerical increase seen in any of the other dose groups. The rate of hepatic carcinoma in the high-dose animals was within the historical control limits seen for the strain of mice used. The female mice were given a dose larger than the maximum tolerated dose, as indicated by excessive (30%) weight decrement as compared with concurrent controls and evidence of mild liver injury (transaminase elevations). The occurrence of a marginal finding at high dose only in animals given an excessive and somewhat hepatotoxic dose, with no evidence of a carcinogenic effect in rats, male mice, and female mice (given up to 360 mg/kg/day, about 60 times the human dose), and a negative mutagenicity battery are not considered evidence of a carcinogenic potential for Axid.

Axid was not mutagenic in a battery of tests performed to evaluate its potential genetic toxicity, including bacterial mutation tests, unscheduled DNA synthesis, sister chromatid exchange, mouse lymphoma assay, chromosome aberration tests, and a micronucleus test.

In a two-generation, perinatal and postnatal fertility study in rats, doses of nizatidine up to 650 mg/kg/day produced no adverse effects on the reproductive performance of parental animals or their progeny.

Pregnancy—Teratogenic Effects—Pregnancy Category C—Oral reproduction studies in rats at doses up to 300 times the human dose and in Dutch Belted rabbits at doses up to 55 times the human dose revealed no evidence of impaired fertility or teratogenic effect; but, at a dose equivalent to 300 times the human dose, treated rabbits had abortions, decreased number of live fetuses, and depressed fetal weights. On intravenous administration to pregnant New Zealand White rabbits, nizatidine at 20 mg/kg produced cardiac enlargement, coarctation of the aortic arch, and cutaneous edema in one fetus, and at 50 mg/kg, it produced ventricular anomaly, distended abdomen, spina bifida, hydrocephaly, and enlarged heart in one fetus. There are, however, no adequate and well-controlled studies in pregnant women. It is also not known whether nizatidine can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. Nizatidine should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers—Studies in lactating women have shown that 0.1% of an oral dose is secreted in human milk in proportion to plasma concentrations. Because of growth depression in pups reared by treated lactating rats, a decision should be made whether to discontinue nursing or the drug, taking into account the importance of the drug to the mother.

Pediatric Use—Safety and effectiveness in children have not been established.

Use in Elderly Patients—Healing rates in elderly patients were similar to those in younger age groups as were the rates of adverse events and laboratory test abnormalities. Age alone may not be an important factor in the disposition of nizatidine. Elderly patients may have reduced renal function.

Adverse Reactions: Clinical trials of varying durations included almost 5,000 patients. Among the more common adverse events in domestic placebo-controlled trials of over 1,900 nizatidine patients and over 1,300 on placebo, sweating (1% vs 0.2%), urticaria (0.5% vs <0.01%), and somnolence (2.4% vs 1.3%) were significantly more common with nizatidine. It was not possible to determine whether a variety of less common events was due to the drug.

Hepatic—Hepatocellular injury (elevated liver enzyme tests or alkaline phosphatase) possibly or probably related to nizatidine occurred in some patients. In some cases, there was marked elevation (>500 IU/L) in SGOT or SGPT and, in a single instance, SGPT was >2,000 IU/L. The incidence of elevated liver enzymes overall and elevations of up to three times the upper limit of normal, however, did not significantly differ from that in placebo patients. Hepatitis and jaundice have been reported. All abnormalities were reversible after discontinuation of Axid.

Cardiovascular—In clinical pharmacology studies, short episodes of asymptomatic ventricular tachycardia occurred in two individuals administered Axid and in three untreated subjects.

CNS—Rare cases of reversible mental confusion have been reported.

Endocrine—Clinical pharmacology studies and controlled clinical trials showed no evidence of antiandrogenic activity due to nizatidine. Impotence and decreased libido were reported with equal frequency by patients on nizatidine and those on placebo. Gynecomastia has been reported rarely.

Hematologic—Fatal thrombocytopenia was reported in a patient treated with nizatidine and another H_2-receptor antagonist. This patient had previously experienced thrombocytopenia while taking other drugs. Rare cases of thrombocytopenic purpura have been reported.

Integumental—Sweating and urticaria were reported significantly more frequently in nizatidine- than in placebo-treated patients. Rash and exfoliative dermatitis were also reported.

Hypersensitivity—As with other H_2-receptor antagonists, rare cases of anaphylaxis following nizatidine administration have been reported. Because cross-sensitivity among this class has been observed, H_2-receptor antagonists should not be administered to those with a history of hypersensitivity to these agents. Rare episodes of hypersensitivity reactions (eg, bronchospasm, laryngeal edema, rash, and eosinophilia) have been reported.

Other—Hyperuricemia unassociated with gout or nephrolithiasis was reported. Eosinophilia, fever, and nausea related to nizatidine have been reported.

Overdosage: Overdoses of Axid have been reported rarely. If overdosage occurs, activated charcoal, emesis, or lavage should be considered along with clinical monitoring and supportive therapy. Renal dialysis for four to six hours increased plasma clearance by approximately 84%.

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In addition, in view of The Copyright Revision Act of 1976, effective Jan. 1, 1978, transmittal letters to the editor should contain the following language: "In consideration of the Missouri State Medical Association's taking action in reviewing and editing my submission, the author(s) undersigned hereby transfers, assigns or otherwise conveys all copyright ownership to the MSMA in the event that such work is published by the MSMA." We regret that transmittal letters not containing the foregoing language signed by all authors of the submission will necessitate delay in review of the manuscript. Please include the title of the article in the transmittal letter.

Manuscripts

Manuscripts should be typewritten, double-spaced, and the original with one copy submitted. Retain another copy for proofreading. Please number the pages of your manuscript. Manuscripts are not returned. Hospital and University appointments of the author(s) should accompany the manuscript. A synopsis-abstract of no more than 75 words should accompany the manuscript. Manuscripts may be submitted on 5¼ or 3½ floppy disks using WordPerfect 5.1,4.2 or below.

References

References should be cited in numerical order in the text and arranged at the end of the article in the same order in which they are cited. The reference should give name of author, title of article, name of periodical, volume number, initial page number and year. Authors are responsible for reference accuracy.

Illustrations

Illustrations should be glossy prints or drawings in India ink on white paper. They should not be mounted and name of author and figure number should be penciled lightly on the back. Legends should appear on a separate sheet.

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Reprint order blanks will accompany proof, which will be sent to authors prior to publication.

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Editorials should be written in clear, concise language. Length should be about two or three pages typed with double spacing.

Letters

Letters will be published at the discretion of the editor, managing editor, and Editorial Board.

Deadlines

All material other than scientific should be received prior to the first of the month preceding month of publication.

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VASOTEC®

(ENALAPRIL MALEATE | MSD)

VASOTEC is available in 2.5-mg, 5-mg, 10-mg, and 20-mg tablet strengths.

Contraindications: VASOTEC® (Enalapril Maleate, MSD) is contraindicated in patients who are hypersensitive to this product and in patients with a history of angioedema related to previous treatment with an ACE inhibitor.

Warnings: *Angioedema* Angioedema of the face, extremities, lips, tongue, glottis, and/or larynx has been reported in patients treated with ACE inhibitors, including VASOTEC. In such cases, VASOTEC should be promptly discontinued and the patient carefully observed until the swelling disappears In instances where swelling has been confined to the face and lips, the condition has generally resolved without treatment, although antihistamines have been useful in relieving symptoms Angioedema associated with laryngeal edema may be fatal. **Where there is involvement of the tongue, glottis, or larynx likely to cause airway obstruction, appropriate therapy, e.g., subcutaneous epinephrine solution 1:1000 (0.3 mL to 0.5 mL), should be promptly administered.** (See ADVERSE REACTIONS.)

Hypotension: Excessive hypotension is rare in uncomplicated hypertensive patients treated with VASOTEC alone Patients with heart failure given VASOTEC commonly have some reduction in blood pressure, especially with the first dose, but discontinuation of therapy for continuing symptomatic hypotension usually is not necessary when dosing instructions are followed, caution should be observed when initiating therapy (See DOSAGE AND ADMINISTRATION.) Patients at risk for excessive hypotension, sometimes associated with oliguria and/or progressive azotemia and rarely with acute renal failure and/or death, include those with the following conditions or characteristics heart failure, hyponatremia, high-dose diuretic therapy, recent intensive diuresis or increase in diuretic dose, renal dialysis, or severe volume and/or salt depletion of any etiology. It may be advisable to eliminate the diuretic (except in patients with heart failure), reduce the diuretic dose, or increase salt intake cautiously before initiating therapy with VASOTEC in patients at risk for excessive hypotension who are able to tolerate such adjustments (See PRECAUTIONS, *Drug Interactions* and ADVERSE REACTIONS.) In patients at risk for excessive hypotension, therapy should be started under very close medical supervision and such patients should be followed closely for the first two weeks of treatment and whenever the dose of enalapril and/or diuretic is increased Similar considerations may apply to patients with ischemic heart disease or cardiovascular disease in whom an excessive fall in blood pressure could result in a myocardial infarction or cerebrovascular accident If excessive hypotension occurs, the patient should be placed in the supine position and, if necessary, receive an intravenous infusion of normal saline A transient hypotensive response is not a contraindication to further doses of VASOTEC, which usually can be given without difficulty once the blood pressure has stabilized If symptomatic hypotension develops, a dose reduction or discontinuation of VASOTEC or concomitant diuretic may be necessary

Neutropenia/Agranulocytosis: Another ACE inhibitor, captopril, has been shown to cause agranulocytosis and bone marrow depression, rarely in uncomplicated patients but more frequently in patients with renal impairment, especially if they also have a collagen vascular disease Available data from clinical trials of enalapril are insufficient to show that enalapril does not cause agranulocytosis at similar rates Foreign marketing experience has revealed several cases of neutropenia or agranulocytosis in which a causal relationship to enalapril cannot be excluded Periodic monitoring of white blood cell counts in patients with collagen vascular disease and renal disease should be considered

Precautions: *General Impaired Renal Function* As a consequence of inhibiting the renin-angiotensin-aldosterone system, changes in renal function may be anticipated in susceptible individuals In patients with severe heart failure whose renal function may depend on the activity of the renin-angiotensin-aldosterone system, treatment with ACE inhibitors, including VASOTEC, may be associated with oliguria and/or progressive azotemia and rarely with acute renal failure and/or death

In clinical studies in hypertensive patients with unilateral or bilateral renal artery stenosis, increases in blood urea nitrogen and serum creatinine were observed in 20% of patients These increases were almost always reversible upon discontinuation of enalapril and/or diuretic therapy In such patients, renal function should be monitored during the first few weeks of therapy

Some patients with hypertension or heart failure with no apparent preexisting renal vascular disease have developed increases in blood urea and serum creatinine, usually minor and transient, especially when VASOTEC has been given concomitantly with a diuretic. This is more likely to occur in patients with preexisting renal impairment. Dosage reduction and/or discontinuation of the diuretic and/or VASOTEC may be required

Evaluation of patients with hypertension or heart failure should always include assessment of renal function. (See DOSAGE AND ADMINISTRATION.)

Hyperkalemia Elevated serum potassium (>5.7 mEq/L) was observed in approximately 1% of hypertensive patients in clinical trials In most cases these were isolated values which resolved despite continued therapy Hyperkalemia was a cause of discontinuation of therapy in 0 28% of hypertensive patients In clinical trials in heart failure, hyperkalemia was observed in 3 8% of patients, but was not a cause for discontinuation

Risk factors for the development of hyperkalemia include renal insufficiency, diabetes mellitus, and the concomitant use of potassium-sparing diuretics, potassium supplements, and/or potassium-containing salt substitutes, which should be used cautiously, if at all, with VASOTEC. (See *Drug Interactions*.)

Surgery/Anesthesia In patients undergoing major surgery or during anesthesia with agents that produce hypotension, enalapril may block angiotensin II formation secondary to compensatory renin release If hypotension occurs and is considered to be due to this mechanism, it can be corrected by volume expansion

Information for Patients.

Angioedema Angioedema, including laryngeal edema, may occur especially following the first dose of enalapril. Patients should be so advised and told to report immediately any signs or symptoms suggesting angioedema (swelling of face, extremities, eyes, lips, tongue, difficulty in swallowing or breathing) and to take no more drug until they have consulted with the prescribing physician.

Hypotension: Patients should be cautioned to report lightheadedness, especially during the first few days of therapy If actual syncope occurs, the patients should be told to discontinue the drug until they have consulted with the prescribing physician

All patients should be cautioned that excessive perspiration and dehydration may lead to an excessive fall in blood pressure because of reduction in fluid volume Other causes of volume depletion such as vomiting or diarrhea may also lead to a fall in blood pressure, patients should be advised to consult with the physician.

Hyperkalemia Patients should be told not to use salt substitutes containing potassium without consulting their physician

Neutropenia: Patients should be told to report promptly any indication of infection (e g., sore throat, fever) which may be a sign of neutropenia

NOTE As with many other drugs, certain advice to patients being treated with enalapril is warranted This information is intended to aid in the safe and effective use of this medication. It is not a disclosure of all possible adverse or intended effects

Drug Interactions:

Hypotension: Patients on Diuretic Therapy Patients on diuretics and especially those in whom diuretic therapy was recently instituted may occasionally experience an excessive reduction of blood pressure after initiation of therapy with enalapril. The possibility of hypotensive effects with enalapril can be minimized by either discontinuing the diuretic or increasing the salt intake prior to initiation of treatment with enalapril If it is necessary to continue the diuretic, provide close medical supervision after the initial dose for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and DOSAGE AND ADMINISTRATION.)

Agents Causing Renin Release The antihypertensive effect of VASOTEC is augmented by antihypertensive agents that cause renin release (e g , diuretics)

Other Cardiovascular Agents. VASOTEC has been used concomitantly with beta-adrenergic-blocking agents, methyldopa, nitrates, calcium-blocking agents, hydralazine, prazosin, and digoxin without evidence of clinically significant adverse interactions

Agents Increasing Serum Potassium: VASOTEC attenuates potassium loss caused by thiazide-type diuretics. Potassium-sparing diuretics (e.g , spironolactone, triamterene, or amiloride), potassium supplements, or potassium-containing salt substitutes may lead to significant increases in serum potassium. Therefore, if concomitant use of these agents is indicated because of demonstrated hypokalemia, they should be used with caution and with frequent monitoring of serum potassium. Potassium-sparing agents should generally not be used in patients with heart failure receiving VASOTEC

Lithium. Lithium toxicity has been reported in patients receiving lithium concomitantly with drugs which cause elimination of sodium, including ACE inhibitors. A few cases of lithium toxicity have been reported in patients receiving concomitant VASOTEC and lithium and were reversible upon discontinuation of both drugs. It is recommended that serum lithium levels be monitored frequently if enalapril is administered concomitantly with lithium.

Pregnancy – Category C: There was no fetotoxicity or teratogenicity in rats treated with up to 200 mg/kg/day of enalapril (333 times the maximum human dose) Fetotoxicity, expressed as a decrease in average fetal weight, occurred in rats given 1200 mg/kg/day of enalapril but did not occur when these animals were supplemented with saline Enalapril was not teratogenic in rabbits However, maternal and fetal toxicity occurred in some rabbits at doses of 1 mg/kg/day or more. Saline supplementation prevented the maternal and fetal toxicity seen at doses of 3 and 10 mg/kg/day, but not at 30 mg/kg/day (50 times the maximum human dose).

Radioactivity was found to cross the placenta following administration of labeled enalapril to pregnant hamsters.

There are no adequate and well-controlled studies of enalapril in pregnant women. However, data are available that show enalapril crosses the human placenta Because the risk of fetal toxicity with the use of ACE inhibitors has not been clearly defined, VASOTEC® (Enalapril Maleate, MSD) should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Postmarketing experience with all ACE inhibitors thus far suggests the following with regard to pregnancy outcome. Inadvertent exposure limited to the first trimester of pregnancy has not been reported to affect fetal outcome adversely Fetal exposure during the second and third trimesters of pregnancy has been associated with fetal and neonatal morbidity and mortality

When ACE inhibitors are used during the later stages of pregnancy, there have been reports of hypotension and decreased renal perfusion in the newborn. Oligohydramnios in the mother has also been reported, presumably representing decreased renal function in the fetus. Infants exposed *in utero* to ACE inhibitors should be closely observed for hypotension, oliguria, and hyperkalemia If oliguria occurs, attention should be directed toward support of blood pressure and renal perfusion with the administration of fluids and pressors as appropriate Problems associated with prematurity such as patent ductus arteriosus have occurred in association with maternal use of ACE inhibitors, but it is not clear whether they are related to ACE inhibition, maternal hypertension, or the underlying prematurity

Nursing Mothers. Milk in lactating rats contains radioactivity following administration of ^{14}C enalapril maleate. It is not known whether this drug is secreted in human milk Because many drugs are secreted in human milk, caution should be exercised when VASOTEC is given to a nursing mother.

Pediatric Use: Safety and effectiveness in children have not been established

Adverse Reactions: VASOTEC has been evaluated for safety in more than 10,000 patients, including over 1000 patients treated for one year or more VASOTEC has been found to be generally well tolerated in controlled clinical trials involving 2987 patients

HYPERTENSION. The most frequent clinical adverse experiences in controlled trials were headache (5.2%), dizziness (4 3%), and fatigue (3%).

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in controlled clinical trials were diarrhea (1.4%), nausea (1 4%), rash (1 4%), cough (1.3%), orthostatic effects (1 2%), and asthenia (1.1%).

HEART FAILURE. The most frequent clinical adverse experiences in both controlled and uncontrolled trials were: dizziness (7 9%), hypotension (6 7%), orthostatic effects (2 2%), syncope (2 2%), cough (2 2%), chest pain (2.1%), and diarrhea (2.1%)

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in both controlled and uncontrolled clinical trials were fatigue (1.8%), headache (1 8%), abdominal pain (1.6%), asthenia (1 6%), orthostatic hypotension (1 6%), vertigo (1 6%), angina pectoris (1.5%), nausea (1.3%), vomiting (1.3%), bronchitis (1.3%), dyspnea (1.3%), urinary tract infection (1 3%), rash (1.3%), and myocardial infarction (1 2%).

Other serious clinical adverse experiences occurring since the drug was marketed or adverse experiences occurring in 0 5% to 1% of patients with hypertension or heart failure in clinical trials in order of decreasing severity within each category:

Cardiovascular: Cardiac arrest, myocardial infarction or cerebrovascular accident, possibly secondary to excessive hypotension in high-risk patients (see WARNINGS, *Hypotension*); pulmonary embolism and infarction, pulmonary edema, rhythm disturbances, atrial fibrillation; palpitation.

Digestive Ileus, pancreatitis, hepatitis (hepatocellular or cholestatic jaundice), melena, anorexia, dyspepsia, constipation, glossitis, stomatitis, dry mouth

Musculoskeletal. Muscle cramps

Nervous/Psychiatric: Depression, confusion, ataxia, somnolence, insomnia, nervousness, paresthesia

Urogenital: Renal failure, oliguria, renal dysfunction (see PRECAUTIONS and DOSAGE AND ADMINISTRATION).

Respiratory Bronchospasm, rhinorrhea, sore throat and hoarseness, asthma, upper respiratory infection.

Skin Exfoliative dermatitis, toxic epidermal necrolysis, Stevens-Johnson syndrome, herpes zoster, erythema multiforme, urticaria, pruritus, alopecia, flushing, hyperhidrosis

Special Senses. Blurred vision, taste alteration, anosmia, tinnitus, conjunctivitis, dry eyes, tearing

A symptom complex has been reported which may include a positive ANA, an elevated erythrocyte sedimentation rate, arthralgias/arthritis, myalgias, fever, serositis, vasculitis, leukocytosis, eosinophilia, photosensitivity, rash, and other dermatologic manifestations

Angioedema Angioedema has been reported in patients receiving VASOTEC (0 2%). Angioedema associated with laryngeal edema may be fatal. If angioedema of the face, extremities, lips, tongue, glottis, and/or larynx occurs, treatment with VASOTEC should be discontinued and appropriate therapy instituted immediately (See WARNINGS.)

Hypotension. In the hypertensive patients, hypotension occurred in 0 9% and syncope occurred in 0.5% of patients following the initial dose or during extended therapy Hypotension or syncope was a cause for discontinuation of therapy in 0 1% of hypertensive patients. In heart failure patients, hypotension occurred in 6 7% and syncope occurred in 2 2% of patients. Hypotension or syncope was a cause for discontinuation of therapy in 1.9% of patients with heart failure (See WARNINGS.)

Clinical Laboratory Test Findings:

Serum Electrolytes. Hyperkalemia (see PRECAUTIONS), hyponatremia

Creatinine, Blood Urea Nitrogen In controlled clinical trials, minor increases in blood urea nitrogen and serum creatinine, reversible upon discontinuation of therapy, were observed in about 0 2% of patients with essential hypertension treated with VASOTEC alone Increases are more likely to occur in patients receiving concomitant diuretics or in patients with renal artery stenosis. (See PRECAUTIONS.) In patients with heart failure who were also receiving diuretics with or without digitalis, increases in blood urea nitrogen or serum creatinine, usually reversible upon discontinuation of VASOTEC and/or other concomitant diuretic therapy, were observed in about 11% of patients. Increases in blood urea nitrogen or creatinine were a cause for discontinuation in 1 2% of patients.

Hemoglobin and Hematocrit Small decreases in hemoglobin and hematocrit (mean decreases of approximately 0.3 g% and 1.0 vol %, respectively) occur frequently in either hypertension or heart failure patients treated with VASOTEC but are rarely of clinical importance unless another cause of anemia coexists In clinical trials, less than 0 1% of patients discontinued therapy due to anemia

Other (Causal Relationship Unknown). In marketing experience, rare cases of neutropenia, thrombocytopenia, and bone marrow depression have been reported. A few cases of hemolysis have been reported in patients with G6PD deficiency

Liver Function Tests. Elevations of liver enzymes and/or serum bilirubin have occurred.

Dosage and Administration: *Hypertension.* In patients who are currently being treated with a diuretic, symptomatic hypotension occasionally may occur following the initial dose of VASOTEC The diuretic should, if possible, be discontinued for two to three days before beginning therapy with VASOTEC to reduce the likelihood of hypotension. (See WARNINGS) If the patient's blood pressure is not controlled with VASOTEC alone, diuretic therapy may be resumed.

If the diuretic cannot be discontinued, an initial dose of 2.5 mg should be used under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour (See WARNINGS and PRECAUTIONS, *Drug Interactions*.)

The recommended initial dose in patients not on diuretics is 5 mg once a day Dosage should be adjusted according to blood pressure response The usual dosage range is 10 to 40 mg per day administered in a single dose or in two divided doses. In some patients treated once daily, the antihypertensive effect may diminish toward the end of the dosing interval. In such patients, an increase in dosage or twice-daily administration should be considered. If blood pressure is not controlled with VASOTEC alone, a diuretic may be added

Concomitant administration of VASOTEC with potassium supplements, potassium salt substitutes, or potassium-sparing diuretics may lead to increases of serum potassium (see PRECAUTIONS).

Dosage Adjustment in Hypertensive Patients with Renal Impairment. The usual dose of enalapril is recommended for patients with a creatinine clearance > 30 mL/min (serum creatinine of up to approximately 3 mg/dL). For patients with creatinine clearance ≤ 30 mL/min (serum creatinine ≥ 3 mg/dL), the first dose is 2 5 mg once daily The dosage may be titrated upward until blood pressure is controlled or to a maximum of 40 mg daily

Heart Failure VASOTEC is indicated as adjunctive therapy with diuretics and digitalis The recommended starting dose is 2.5 mg once or twice daily. After the initial dose of VASOTEC, the patient should be observed under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and PRECAUTIONS, *Drug Interactions*.) If possible, the dose of the diuretic should be reduced, which may diminish the likelihood of hypotension. The appearance of hypotension after the initial dose of VASOTEC does not preclude subsequent careful dose titration with the drug, following effective management of the hypotension The usual therapeutic dosing range for the treatment of heart failure is 5 to 20 mg daily given in two divided doses. The maximum daily dose is 40 mg Once-daily dosing has been effective in a controlled study, but nearly all patients in this study were given 40 mg, the maximum recommended daily dose, and there has been much more experience with twice-daily dosing. In addition, in a placebo-controlled study which demonstrated reduced mortality in patients with severe heart failure (NYHA Class IV), patients were treated with 2.5 to 40 mg per day of VASOTEC, almost always administered in two divided doses. (See CLINICAL PHARMACOLOGY, *Pharmacodynamics and Clinical Effects*.) Dosage may be adjusted depending upon clinical or hemodynamic response. (See WARNINGS.)

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Missouri Medicine

Journal of the Missouri State Medical Association November 1990

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AMERICAN MEDICAL ASSOCIATION

Interactions
A Medical Staff Leadership Program

November 29, 1990
The Peabody Orlando
Orlando, Florida

Medical staff leaders may find that their special clinical skills and extensive clinical experience do little to prepare them for the complexities of this demanding role. A role that requires the skills and sensitivity of an arbitrator, facilitator, manager, advisor, negotiator, communicator, problem solver, peacemaker and professional peer.

To help you refine your personal style of leadership, develop your professional decision-making and problem-solving abilities, and enhance your repertoire of management skills, the AMA is pleased to offer Interactions, the 1990 Medical Staff Leadership Program. It offers ample opportunity for leadership skill-building, self-assessment, frank conversation and feedback.

Program Participants

If you are a new chief-of-staff, department director, committee chairman or you serve in any other leadership capacity, the AMA's new Interactions can provide you with the self-assurance and skills you need to be successful in this challenging new role.

Leadership Objectives

- Improve emerging medical staff leaders' understanding of skills needed to perform formal duties.
- Enhance the understanding of medical staff leadership conflicts inherent in today's healthcare scene.
- Increase ability to interact effectively with medical staff peers and hospital/governing body leadership.

Location and Date

The AMA Medical Staff Leadership Program will be conducted on Thursday, November 29, 1990, at the Peabody Orlando Hotel, in Orlando, Florida. For ease of accommodations and travel, the AMA offers the program one day prior to the 1990 Hospital Medical Staff Section Interim Meeting, and three days prior to the 1990 AMA Interim Meeting.

Registration

For immediate registration or information, call toll-free 1-800-621-8335. Please have your MasterCard or Visa ready.

Registration fee

AMA Member - $275
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GUEST EDITORIAL

by S.D. Madduri, M.D.

The answer to the indigent care problem lies in the cooperative efforts of physicians, health care providers, the public sector and the private sector.

Health Care in the United States: Who is Minding the Indigent?

Mrs. L.B. is a 55-year-old patient whom I first saw in my office three years ago. She suffered from a distressing urinary leak that caused her to wet herself whenever she coughed or sneezed. With a simple examination and some preliminary tests, she was diagnosed with a dropped bladder. I reassured her that she could be helped with a bladder pin-up operation. However, she did not have insurance and was still paying for a gall bladder operation endured two years ago. She did not qualify for state aid and could not afford to buy insurance. She still waits, hoping that "something will come up."

John is a young man in his late twenties. He came to see me with testicular swelling. Detected in examination was a hard nodule that in all probability was testicular cancer. John recently changed jobs and his insurance had yet to go into effect. Married, with two children, he had no financial backup. To treat his cancer, he needed surgery, followed by radiotherapy and chemotherapy, which could run into thousands of dollars. I sent him to a state hospital where he was told he could not be treated free of charge. The "discounted rate" he was offered was still far beyond his financial reach. Finally, after three months of John's being shuffled from place to place and agency to agency, I found a chief resident at a university hospital in a large metropolitan city who agreed to treat him. I was told that university grants would take care of John's hospitalization because he was a good teaching case. By the time John was finally operated on, the tumor had spread to his abdomen and needed much more extensive surgery, radiotherapy and chemotherapy. He and his family went through a hell of sorts for months, making the long trips for his treatments, staying in motels, etc... He lost his job and his financial resources and now finds himself trying to rebuild his life.

Tragic stories of people who cannot afford medical care are numerous. I vividly remember the preacher from a small church in a neighboring town who had to return home and wait until the people of his church raised enough money in donations for him to undergo surgery for prostate cancer.

For two months now, a 45-year-old man has suffered from the pain and agony of a kidney stone while he waits for a state agency to process his papers. This is his only hope of obtaining any financial aid. I can only helplessly watch. It is equally frustrating to see a young student at the local junior college spend his entire life savings to have minor, but necessary, surgery at a local hospital.

What is happening? How can the richest nation in the world fail to provide medical care to its people? The reasons are complex, but the reality is painfully obvious. The poor are denied access to adequate medical care. Health care in the United States is an excellent example of the "all or none" phenomenon. People who have insur-

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ance and who can afford it, will receive the best medical care in the world, and those without resources will receive none.

We spend 12% of our gross national product (GNP) on health care, the highest in the world. Britain spends 7% of their GNP on health care, Japan 5% and Canada 8.6%. In the United States in 1986, a total of $458.2 billion was spent on health care, while during that same year, Canada spent only $47.8 billion.

Apart from the poor and the indigent, the population of employed but uninsured grows rapidly. This is frustrating since most of these are young folks, fresh out of school and tasting the realities of their first jobs. Skyrocketing health insurance premiums prohibit many employers from providing coverage. These workers, unable to buy insurance by themselves, simply decide to take their chances. Within the employed population in 1985, there were 17 million uninsured workers, with nearly three fourths of them having an annual income under $10,000.

The emphasis placed on the bottom line in private medical care and the inadequacy of the public system are certainly the most important reasons for the abandonment of the poor. The federal government has targeted the health care dollar as the prime source for balancing the dwindling budget. Cost containment efforts in both public and private sectors, in addition to increased competition within the health care industry has disrupted the traditional way indigent care is financed. The hierarchy in Washington should note that a fraction of the funds spent on construction and maintenance of one nuclear submarine could provide care for the poor, the indigent and the elderly for an entire year.

Is there hope? The complex problem cannot be addressed or answered by only one person or group. Bold initiatives and reforms undertaken by physicians, health care providers, the private sector and the public sector are essential.

The privilege to practice law or medicine has always carried with it the obligation to serve the poor and the indigent. More medical organizations including the American Medical Association (AMA) stress the importance of the physician's charity care program. The AMA House of Delegates at its last annual convention, unanimously adopted a policy advocating 50 hours per year of "hands-on" charity medical care by its members. This includes offering medical care to those who cannot afford it, as well as accepting Medicaid.

Physicians cannot carry the entire burden. Hospitals must participate in this necessary and noble endeavor. About three years ago, as president of the local county medical society, I tried to organize an alliance to treat the medically indigent. I found physicians willing to volunteer their services and both local hospitals willing to provide a few indigent care beds. Unfortunately, the program never reached the launch pad. The potential for abuse seemed too great. Lack of proper screening methods to determine who was indeed in need of help was a concern. Several of those involved expressed concern over the inability to curb malpractice issues. These worries nipped enthusiasm for the project right in the bud.

Within the private sector, more than half of the uninsured live in families of full-time, steadily employed workers. Insurers, employers and providers should develop alternate sources of affordable insurance, more so for smaller employers. Strong positive incentives from the government are needed. Permitting insurers to deduct 100% of the cost of employee health insurance would be one such incentive. The American Hospital Association supports federally mandated insurance for employees.

Medicaid reform must also be part of the solution. There should be a strengthened federal role in financing Medicaid, and Medicaid eligibility should be expanded. Other major obstacles to controlling runaway medical costs include the malpractice crisis and the increasing costs of practicing high tech medicine.

Frustrated by their inability to control costs and provide care for all, the U.S. Congress is actively considering universal health care. The AMA also endorses some kind of national health care. The Canadian health care system is being considered a favorable alternative by lawmakers. The Canadian system provides medical care to everybody. It has a single payer, the government. The federal government pays about 37% of all health care costs and each of the 10 provinces pays the remainder. Of course, the system is not perfect and has its own inherent flaws. The wait for elective surgery or hospitalization is long and tedious. Technology is for the most part out of reach and hard to obtain, and rationed medical care is obtainable only after a tedious journey through a vast bureaucracy.

There is no single, clearcut answer to the question of how to get medical care to the poor and the needy. The answer lies in the collective, organized and cooperative efforts of all parties concerned: the physicians and other health care providers, the private sector, and the public sector. Together we must come together to find a solution. The problem of caring for the indigent won't just go away if we ignore it. ■

GUEST EDITORIAL

by Maria Evans
University of Missouri-Columbia School of Medicine

Medicine is special in that it is a profession rich in tradition, history and hope. As physicians, it is our responsibility to encourage others to pursue careers in medicine as well.

Investiture

Although we normally associate the word investiture with the installation of university presidents, the Thorndike-Barnhart Dictionary defines it as "a formal investing of a person with an office, dignity, power, or right." In many ways, the people who are close to us – our family, close friends, and those we have chosen as role models – have all placed some degree of investiture in each of us.

Medicine is special in that respect. Our profession is rich with tradition, history and hope. We have a great opportunity to bestow these gifts upon young people in our communities. Many of our own careers were shaped by the guidance of medical school mentors who took the time to share their passion for their area of medicine. Our early desire to enter the profession often stems from the role models that our own family physicians provided. What we are, as physicians and future physicians, comes not only from us, but from what has been bestowed from one generation to the next for thousands of years. In turn, we have the power to practice this same sort of investiture with the next generation.

It saddens me, though, to see some of our colleagues choose a different route. As a student recruiter for our medical school, I get the opportunity to visit with many of Missouri's brightest young minds. I always enjoy chatting with them and answering their questions about medical school, and sharing my hopes and dreams with them, too. It disturbs me, though, when these young scholars confide to me that their hometown physician, or a physician relative, had actively *discouraged* them from pursuing a medical career. Some of these physicians had not only tried to discourage their young charges, but had even intimated that they were foolish for wanting to become a doctor.

I understand much of the frustration that many of our colleagues feel. Outside factors make good medicine harder and harder to practice. I realize some of our colleagues have become disillusioned with medicine, but is that a reason to chase away the largest hope for change within our profession? Nothing ever gets better without change – and change often means new blood. It makes no sense at all to take all that enthusiasm, all that idealism dwelling within bright, young minds and try one's darndest to squash it.

Idealism in itself is not a bad thing. If it weren't for idealism, many of us would still be pumping gas or putting together toasters at the local factory. Idealism is the catalyst that pushes people to rise above the limits to which everyone else may adhere.

It seems that for some individuals, idealism is replaced by cynicism. Whereas wisdom and realism temper the heart, forging real growth in our profession, cynicism kills any chance for growth. I think when we feel the burdens of cynicism, we need to step back and assess all the gifts we still have to invest in the next generation. For instance, I have been an amateur radio operator for almost 15 years. I admit, I don't have that "honeymoon" feeling I used to have about the hobby, but if I just sit and think about it, it still fascinates me that with just a turn of the knob, I can meet a new person from anywhere in the world. Sure, I know all

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about how radio waves work . . . I know how much trouble having a ham station is (I've grown to hate lightning with a passion), but deep down inside it still amazes me that radio waves can actually send part of me somewhere without my leaving the room.

We can recapture some of that romance in the medical profession, too. The whole cycle of birthing and healing and dying occurs right in one building — the hospital. Built into the "art" of medicine is care and trust and pathos and joy. Isn't that a wonderful inheritance for some young person — to be not just an observer, but a *participant* in this continuum? How much really, do DRGs and HMOs and PPOs and RBRVS mean compared to the art of healing? Sometimes, the best way to dust off the old idealism is to invest it into the heart of the next generation. It's very much like the old dog when the new puppy comes home. The old dog ignores the puppy at first, then, when that doesn't work, he snaps at it. For a while, they are at a standoff, until, one day, the owner looks up, and suddenly the old dog is playing again with all the spunk of his own puppyhood days.

Maybe to play again, we need to take on a puppy. Maybe we need to pick out a young person and place some degree of investiture into that person's life — an inheritance not only for that person, but for our profession. ■

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†Constipation, which is easily managed in most patients, is the most commonly reported side effect of Calan SR.

‡Price comparison versus 240-mg Calan SR.

Please see next page of this advertisement for references and a brief summary of prescribing information.

SEARLE

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References:
1. Data on file, G.D. Searle & Co. **2.** 1988 Joint National Committee: The 1988 report of the Joint National Committee on Detection, Evaluation, and Treatment of High Blood Pressure. *Arch Intern Med* 1988;148:1023-1038.

BRIEF SUMMARY

Contraindications: Severe LV dysfunction (see *Warnings*), hypotension (systolic pressure < 90 mm Hg) or cardiogenic shock, sick sinus syndrome (if no pacemaker is present), 2nd- or 3rd-degree AV block (if no pacemaker is present), atrial flutter/fibrillation with an accessory bypass tract (eg, WPW or LGL syndromes), hypersensitivity to verapamil.

Warnings: Verapamil should be avoided in patients with severe LV dysfunction (eg, ejection fraction < 30%) or moderate to severe symptoms of cardiac failure and in patients with any degree of ventricular dysfunction if they are receiving a beta-blocker. Control milder heart failure with optimum digitalization and/or diuretics before Calan SR is used. Verapamil may occasionally produce hypotension. Elevations of liver enzymes have been reported. Several cases have been demonstrated to be produced by verapamil. Periodic monitoring of liver function in patients on verapamil is prudent. Some patients with paroxysmal and/or chronic atrial flutter/fibrillation and an accessory AV pathway (eg, WPW or LGL syndromes) have developed an increased antegrade conduction across the accessory pathway bypassing the AV node, producing a very rapid ventricular response or ventricular fibrillation after receiving I.V. verapamil (or digitalis). Because of this risk, oral verapamil is contraindicated in such patients. AV block may occur (2nd- and 3rd-degree, 0.8%). Development of marked 1st-degree block or progression to 2nd- or 3rd-degree block requires reduction in dosage or, rarely, discontinuation and institution of appropriate therapy. Sinus bradycardia, 2nd-degree AV block, sinus arrest, pulmonary edema and/or severe hypotension were seen in some critically ill patients with hypertrophic cardiomyopathy who were treated with verapamil.

Precautions: Verapamil should be given cautiously to patients with impaired hepatic function (in severe dysfunction use about 30% of the normal dose) or impaired renal function, and patients should be monitored for abnormal prolongation of the PR interval or other signs of overdosage. Verapamil may decrease neuromuscular transmission in patients with Duchenne's muscular dystrophy and may prolong recovery from the neuromuscular blocking agent vecuronium. It may be necessary to decrease verapamil dosage in patients with attenuated neuromuscular transmission. Combined therapy with beta-adrenergic blockers and verapamil may result in additive negative effects on heart rate, atrioventricular conduction and/or cardiac contractility; there have been reports of excessive bradycardia and AV block, including complete heart block. The risks of such combined therapy may outweigh the benefits. The combination should be used only with caution and close monitoring. Decreased metoprolol clearance may occur with combined use. Chronic verapamil treatment can increase serum digoxin levels by 50% to 75% during the first week of therapy, which can result in digitalis toxicity. In patients with hepatic cirrhosis, verapamil may reduce total body clearance and extrarenal clearance of digitoxin. The digoxin dose should be reduced when verapamil is given, and the patient carefully monitored. Verapamil will usually have an additive effect in patients receiving blood-pressure-lowering agents. Disopyramide should not be given within 48 hours before or 24 hours after verapamil administration. Concomitant use of flecainide and verapamil may have additive effects on myocardial contractility, AV conduction, and repolarization. Combined verapamil and quinidine therapy in patients with hypertrophic cardiomyopathy should be avoided, since significant hypotension may result. Concomitant use of lithium and verapamil may result in a lowering of serum lithium levels or increased sensitivity to lithium. Patients receiving both drugs must be monitored carefully. Verapamil may increase carbamazepine concentrations during combined use. Rifampin may reduce verapamil bioavailability. Phenobarbital may increase verapamil clearance. Verapamil may increase serum levels of cyclosporin. Concomitant use of inhalation anesthetics and calcium antagonists needs careful titration to avoid excessive cardiovascular depression. Verapamil may potentiate the activity of neuromuscular blocking agents (curare-like and depolarizing); dosage reduction may be required. Adequate animal carcinogenicity studies have not been performed. One study in rats did not suggest a tumorigenic potential, and verapamil was not mutagenic in the Ames test. Pregnancy Category C. There are no adequate and well-controlled studies in pregnant women. This drug should be used during pregnancy, labor, and delivery only if clearly needed. Verapamil is excreted in breast milk; therefore, nursing should be discontinued during verapamil use.

Adverse Reactions: Constipation (7.3%), dizziness (3.3%), nausea (2.7%), hypotension (2.5%), headache (2.2%), edema (1.9%), CHF, pulmonary edema (1.8%), fatigue (1.7%), dyspnea (1.4%), bradycardia: HR < 50/min (1.4%), AV block: total 1°,2°,3° (1.2%), 2° and 3° (0.8%), rash (1.2%), flushing (0.6%), elevated liver enzymes. The following reactions, reported in 1.0% or less of patients, occurred under conditions where a causal relationship is uncertain: angina pectoris, atrioventricular dissociation, chest pain, claudication, myocardial infarction, palpitations, purpura (vasculitis), syncope, diarrhea, dry mouth, gastrointestinal distress, gingival hyperplasia, ecchymosis or bruising, cerebrovascular accident, confusion, equilibrium disorders, insomnia, muscle cramps, paresthesia, psychotic symptoms, shakiness, somnolence, arthralgia and rash, exanthema, hair loss, hyperkeratosis, macules, sweating, urticaria, Stevens-Johnson syndrome, erythema multiforme, blurred vision, gynecomastia, increased urination, spotty menstruation, impotence.

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EDITOR'S DESK

by Donald G. Sessions, M.D.
Editor

So Much For The Living Will

As a part of a person's right to self-determination, every adult has the opportunity to accept or decline any medical treatment – or do they? Both the Quinlan decision and most recently, the Cruzan case, have indicated the need for a document in which a person may indicate desires for advanced care; This is necessary to handle the medical and ethical problems of either terminating or not beginning life-sustaining interventions. By definition, a living will is an instrument that allows a patient to reject life sustaining medical treatments, usually when a person is terminally ill.[1] An advanced care document is a general statement of a patient's preferences regarding the medical interventions to be implemented if he or she becomes incompetent. There are many kinds of advanced care documents.[2] These documents can make requests for specific treatments or declarations of personal values. They can also appoint a proxy decision-maker, or they can allow the patient to decline specific treatments under specific conditions. A living will is thus a specific form of advanced care document.

Use of the living will is a recent phenomenon.[3] California in 1976 (the year of the Quinlan decision) was the first state to enact a natural death act recognizing a living will. Since then, 41 states have enacted such laws. Most of these laws have come into being following the Conroy decision in New Jersey, which legalized the termination of artificial nutrition and hydration under certain conditions.[4]

Recently, Concern for Dying has revised its previous living will. The operative section is as follows:

> *If I am permanently unconscious or there is no reasonable expectation of my recovery from a seriously incapacitating or lethal illness or condition, I do not wish to be kept alive by artificial means. I request that I be given all care necessary to keep me comfortable and free of pain, even if pain-relieving medications may hasten my death, and I direct that no life-sustaining treatment be provided except as I or my surrogate specifically authorize.*[5]

Included, but not as part of the document are additional instructions:

You may wish to add specific statements to the Living Will in the space provided for that purpose. Such statements might concern:

* Cardiopulmonary resuscitation
* Artificial or invasive measures for providing nutrition and hydration
* Kidney dialysis
* Mechanical or artificial respiration
* Blood transfusions
* Surgery (such as amputation)
* Antibiotics

The important additions here include: terminology regarding conditions that are less than terminal such as permanently unconscious, no reasonable expectation

continued on page 808

continued from page 807

of recovery, and seriously incapacitating illness or condition; the naming of a surrogate for decision making; and the possibility of indicating specific interventions that patients can prospectively either request or decline.

My wife has long been interested in living wills and advanced care directives. My own interest in living wills has increased in the last year since I have been chairing our hospital's Bioethics Committee. With all the flurry of activity surrounding the Cruzan case and more recently the Danforth Bill regarding medical directives, the committee has been looking into creating some institutional guidelines regarding advanced directives. With this in mind, when my wife was scheduled to have some surgery recently, she asked me to obtain a living will form so we could act responsibly.

I found a living will the night before surgery and brought it with us to the hospital the next day. We both got caught up in the admission process but just as she was being wheeled away to the operating room, she remembered and asked me for it so she could sign it. Much to my surprise it needed to be witnessed by two people who knew her personally but were not related to her. There were no such people available that morning – especially with her on the guerney and the orderly pushing her away. My embarrassment was complete. After all our talk about the necessity of having a living will, I had failed in my first chance to use one. The irony of this happening to the wife of the chairman of the Bioethics Committee was not lost on her – how often must I hear that "the cobbler's wife has no shoes." So much for living wills. Well, maybe next time.

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1. Concern for Dying, Questions and Answers About the Living Will. New York, Concern for Dying, 1984.
2. Emanuel LL and Emanuel EJ: The medical directive: A new comprehensive advanced care document. *JAMA* 1989;261:3288-3293.
3. Emanuel LL and Emanuel EJ: Living wills: Past, present, and future. *The Journal of Clinical Ethics* 1990;1:9-19.
4. In re Conroy, 98 New Jersey: 321 (1988).
5. Concern for Dying, A Living Will and Appointment of a Surrogate Decision Maker, New York, Concern for Dying, 1989.

■

If you haven't had a mammogram, you need more than your breasts examined.

A mammogram is a safe, low-dose X-ray that can detect breast cancer before there's a lump. In other words, it could save your life and your breast.

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PRESIDENT'S PAGE

by Gary A. Dyer, M.D.
MSMA President

Every patient has something unique about them. We, as physicians must take the time to find out about those unique traits patients bring into our offices.

If All Patients Were Poets

The week started off in typical fashion with a steady stream of basal cell carcinomas, nevi, warts, and actinic keratoses. The usual number of "never die and never get well" patients with psoriasis and chronic eczemas made their follow-up visits. And there were a few of those challenging rare birds that get the adrenalin flowing, making dermatology practice interesting, and postponing any considerations of early retirement, the Sherlockian 7% solution, or a return to farming.

This particular week, the challenges were zosteriform localized Darier's Disease, which responded to liquid nitrogen cryotherapy (less disfiguring than the nitric acid the patient had been previously using), and a young lady with generalized itching and pain in one hip. She was referred for evaluation of the hip pain, and the internist called to report that the repeat biopsy in the hip area revealed Hodgkin's disease.

During the visits, there was the usual banter about the weather, the drive in from rural areas, and the latest in government affairs. The first pearl of the week came from a patient who said, "You know Doc, any government that's big enough to give you everything you want is a government that's big enough to take everything you've got!" I told him I would write that down, because it sure sounded like scripture to me!

One afternoon that week, a quiet, polite gentleman with blue eyes and sandy, almost reddish hair, returned for another round of liquid nitrogen freezing of actinic keratoses. On this visit he got my, "What do you do?" question. "I teach at the University," he answered. "What's your area?" I asked. "I write and teach poetry," he responded. In further conversation, I discovered that he had written a poem dealing with his skin condition, and that it had been published along with his other works. He later brought me a copy, and with his permission and the permission of *Poetry Magazine*, it is reprinted on the following page. I was fascinated by the insight the poem offered concerning the patient's perceptions of his skin condition. The lowly actinic keratosis, the subject of a poem. What if all patients were poets and could carefully craft words to reveal inner feelings about their diseases? Patient history-taking would take on an added dimension.

All patients are not poets, of course, but we as physicians must continually remind ourselves that all patients are people. Each has something unique, a story to tell, a unique job, an accomplishment, or an adventure to share. Diseases can be interesting, but interesting patients with interesting diseases provide an even more pleasing challenge. I resolved that week to try harder to get to know each patient as a person, to try to find something special about each one, and in essence, to go beyond the skin to what lies underneath.

References

1. Trowbridge, W: Living with solar keratosis. *Poetry* 1989;154:271.

■

Living With Solar Keratosis

I do not think that they will sing to me

As I watch my son flail out beyond my call
on the boogie board we rented, everything
goes California — big blue swells cresting white,
beach blankets, beach games, beach sun,
beach flies — and here I stand, like a scarecrow
blown in from some prairie, dressed for fall
in hat and jacket, a red towel draped
over my head, nose painted white,
arms waving at the world's largest ocean.

I'm everybody's parent, who's always there
to haggle down delight: slurp that Coke
before you wipe your mouth off and, bang,
it's herpes-A; swim right after snacking,
and you sleep with the fish; play too long
in sunshine, and you're the poster child
for Dermatology Week. That man on Fourth Street?
Remember him? The one with half an ear,
who pulls the little wagon? I'll count to *three*!

The boys are spiking volleyballs; girls in strings
jiggle by. I need a drink in the darkness
of that dive across the street, but my son
needs me here. Everybody needs me here,
dour ant to chaperon the giddy hoppers,
memento mori on the tube of Coppertone,
a blinking light among the pleasure craft,
sometimes tittered at, though underneath
a surprisingly fun guy, a Beach Boys fan.

William Trowbridge

reprinted from Poetry Magazine, August 1989, p. 271.
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AUXILIARY MESSAGE

by Earlene Miller
Vice-President
Legislation

> *Election Day is here, and the work has just begun for the Auxiliary. Now is the time to get busy finding ways to help the medical profession reach its political goals.*

Legislation

Election day is upon us. Let's hope the elected officials most sympathetic to medicine will take office and work *for* the medical profession. In the meantime, our efforts are just beginning as "We Face the Future Together." It is our obligation to keep legislators informed of organized medicine's position on upcoming legislation in 1991. Some expected legislation for 1991:

*Mandatory Medicare Assignment (*HB1102*)
*Universal Health Care Plan (*HB1127*)
*Drug Use by Professionals (*HB1266*)
*Licensure of Radiologic Personnel (*HB1862*)
*Legalizing Midwifery (*HB1702*)
*Admitting Privileges for Psychologists (*HB1744*)
*Regulation of Tanning Facilities (*SB850*)
*Drug Use by Pregnant Women (*HB1795*)
*Health Care Surrogate/Living Will (*SB508*)

As the eyes and ears of organized medicine on the local level, MSMA auxiliaries can continue to play an important role by planning activities likely to attract the attention of legislators. A few suggestions from other state auxiliaries may prove helpful:

*Distribute AMA's "Tort Reform Compendium" to influential legislators. The report addresses issues such as arbitration, frivolous lawsuit penalties and limits on recovery. (*California*)

*Present members of your state legislature with a first aid kit on their birthday. The kits, filled with items donated by drug companies, are personally delivered to legislators by an auxilian. (*Hawaii*)

*Host a coffee for spouses of state legislators. This helps enhance the image of the medical community and allows sharing of common concerns. Have a speaker focus on female health issues. (*Nebraska*)

*Distribute small fruit baskets to state legislators during a day at the capitol. This can be a joint medical society/auxiliary project. (*Mississippi*)

*Provide cholesterol screening and blood pressure checks for legislators during the day at the capitol. (*North Carolina*)

*Send your state and/or county holiday sharing card to your national and state legislators. This sends greetings from a large number of constituents and makes them aware of our AMA/ERF philanthropic commitment. (*Ohio*)

*Have a breakfast meeting with your legislators on Saturday when they are in their home districts for the weekend.

The MSMA Auxiliary "Day at the Legislature" is scheduled for Wednesday, March 6, 1991. It is my sincere hope that we will see many physicians accompanying their spouses for this day when we can make that important personal contact with our legislators. They *do* listen when we make our position known to them! ■

How You Do The Job Is What Matters, Not How You Get There.

How do you draw a picture of the "ideal" employee? Sometimes verbally, like the official language on an evaluation report. Sometimes with thumbnail sketches, one manager to another—"He shows up ready to work" or "I wish I had 10 more people just like her." Sometimes the picture is in cold hard numbers, like the numbers on a time card or a productivity chart.

In a recent Louis Harris Poll, line managers were asked to put together all their impressions of workers with disabilities, and the picture they drew gave new meaning to the term "able bodied." Here, the numbers told the story: 46% said workers with disabilities were more willing to work than other employees; 40% said they were more punctual and more reliable.

And just under 80% said they were equal to or more productive than other workers!

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PRACTICE MANAGEMENT

by Janice K. Woerth, Ph.D.

Do you have a question for Dr. Woerth? Include your questions along with your name, address and phone number and send them to:

Janice K. Woerth, Ph.D.
Practice Management
c/o *Missouri Medicine*
P.O. Box 1028
Jefferson City, MO 65102
Or call her direct:
816/587-1125

Although your name will not be used in the journal, please include your name and phone number so that Dr. Woerth may contact you if she needs additional information to answer your question.

Dear Dr. Woerth:

As a family practitioner, I have a number of patients who request medical services but are not sick. They may want a cholesterol check, routine physical or pap smear. Which codes should I use when a healthy person requests an examination or testing?

Dr. L.P.

Dear Dr. L.P.:

The codes in the CPT book that cover the routine health care that your patients request are listed under the heading of Preventive Medicine and found on page 14 of the 1990 CPT. The key to their use is explained in the definition of preventive medicine. "Preventive Medicine [codes] are designed to report routine examinations for adults and children as well as `well-baby' encounters when these procedures are performed in the absence of complaints."

These codes are not listed as levels of service but rather by age of the patient. According to the CPT book, the extent of the examination depends on the age of the patient, the circumstances of examination, and abnormalities encountered. It would be appropriate to have several different charges for each of the listed codes depending on the extent of the services rendered.

These preventive medicine codes are appropriate for the follow-up examinations of patients with a history of cancer or other diseases who presently have no medical complaints. They can also be used for all other routine health care like annual pelvic examinations and vision screening.

I am often told that insurance does not pay for these codes. In some cases it is true. Few medical insurance policies cover examinations for routine health care or preventive medicine. However, some insurance policies do cover regular follow-up visits for some conditions, for example, history of cancer or organ transplantation, even though these examinations can be preventive in nature.

Dear Dr. Woerth:

On occasion, I am called to the intensive care unit to provide services for a critically ill patient. The reimbursement I receive from the hospital codes (90200-90200 for initial hospital care, 90240-90280 for subsequent hospital care) seems too low for the skills and time it takes to treat these patients. Is there a way to improve reimbursement for treating critically ill patients?

Dr. R.D.

Dear Dr. R.D.:

Yes, there is a way to improve your reimbursement for treating critically ill patients! Codes to cover this situation are found on page 63 of the 1990 CPT book. The codes for the initial treatment of a critically ill patient, code 99160 and 99162, are paid by the amount of time spent treating the patient. Code 99160 is for each hour of initial critical care and code 99162 is for each additional 30 minutes of critical care. There are also codes for the subsequent follow-up care of critically ill patients, codes 99171-99174. These codes are paid by the level of service rendered, brief through extensive, rather than by the hour.

The Critical Care codes are intended for reimbursement for "care of critically ill patients in a variety of medical emergencies that require the constant attention of the physician." Services rendered during the period designated as critical care include electrical conversion of arrythmia, cardiopulmonary resuscitation, placement of catheters, etc . . . .

Use of these codes should improve your reimbursement for treating critically ill patients as they have a higher allowable amount than most hospital service codes. ■

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For Your Information:

Tuberculosis

Although most people regard tuberculosis as "a disease of the past," recent outbreaks among St. Louis area schoolchildren have served as a stark reminder that the disease once known as "the captain of all the men of death," is still among us.

Despite the fact that the incidence of tuberculosis (TB) has significantly decreased since the 1940s, it still remains the leading cause of death in the world, claiming three million victims worldwide. More than 23,000 cases of TB are reported in the United States each year. In 1989, 278 new cases were reported in Missouri, with 14 counties having a case rate greater than the national average. Over the past five years, TB has claimed the lives of approximately 30 Missouri citizens per year. This situation exists despite our ability to cure and prevent tuberculosis.

The incidence of tuberculosis in Missouri does not appear to be concentrated in any particular area of the state, although the highest incidence occurs in high-population areas such as St. Louis and Kansas City. Eleven Missouri counties (Atchison, Caldwell, Dade, De Kalb, Harrison, Hickory, Holt, Mercer, Putnam, Schuyler, and Sullivan) have had no cases in the past six years.

How is Tuberculosis Acquired?

In most cases, TB is caused by the *Mycobacterium tuberculosis* bacteria. Infected persons spread the bacteria by coughing and sneezing bacteria-laden droplets into the air. This infectious aerosol is inhaled by susceptible individuals. Although the *Mycobacterium* bacteria are encased in a protective waxy coat that provides some resistance to drying, infection rarely occurs via objects such as dishes or bedclothes. In countries where unpasteurized milk is common, infection of the digestive tract can occur. Other species of *Mycobacterium* can cause TB, but this is more likely in the elderly or individuals with decreased immunity, such as those with AIDS.

Who Is Susceptible?

Anyone can acquire TB, but certain groups are more susceptible, including:

* children and elderly individuals

* institutionalized persons (especially those in nursing homes or prisons)

* health care workers or institutional staff members

* homeless individuals

* anyone of low socioeconomic status

* blacks and immigrants from Southeast Asia, Central and South America, or Africa

* anyone with decreased immunity

What Are The Symptoms?

The symptoms of tuberculosis are very nonspecific, and can be confused with a variety of ailments. Cough with sputum production, dizziness, chest wall pain, difficulty breathing, coughing up blood, fever, chills, and night sweats can all occur. All individuals with suspected TB should receive the tuberculin, or PPD test.

What Does It Mean If I Test Positive?

Schoolchildren, health care workers, and institutional staff routinely get screened for TB by either the Mantoux or tine test. If this test is positive, the individual has been exposed to the tuberculosis bacteria but **may or may not** manifest the disease. Only a small fraction of positive reactors have clinical TB. In most cases, the body's own defense mechanisms have "walled off" the bacteria within a focus of lung tissue and arrested the disease. At this point, the disease is **not** contagious. However, all infected individuals remain indefinitely at risk for developing active TB, which **is** contagious. Factors such as aging, malnutrition, alcoholism, decreasing immunity, diabetes, cancer, and steroid therapy can increase chances of re-activation.

Clinical TB is defined by a positive screening test and abnormalities or changes seen on chest X-ray consistent with TB infection. The definitive diagnosis is made by culturing the TB organism.

How Is TB Treated?

Positive reactors without evidence of clinical disease are placed on the drug isoniazid (INH) for 12-18 months. At the end of that time, another chest X-ray is taken and compared to the original to assess the spread of the disease.

Clinical TB is treated with INH plus a second drug, usually ethambutol, rifampin, or streptomycin.

Who Should Receive INH Therapy?

The U.S. Centers for Disease Control list the following recommendations:

* household contacts of known PPD-positive individuals

* individuals whose PPD test converted negative to positive, or any PPD-positive individual under age 35

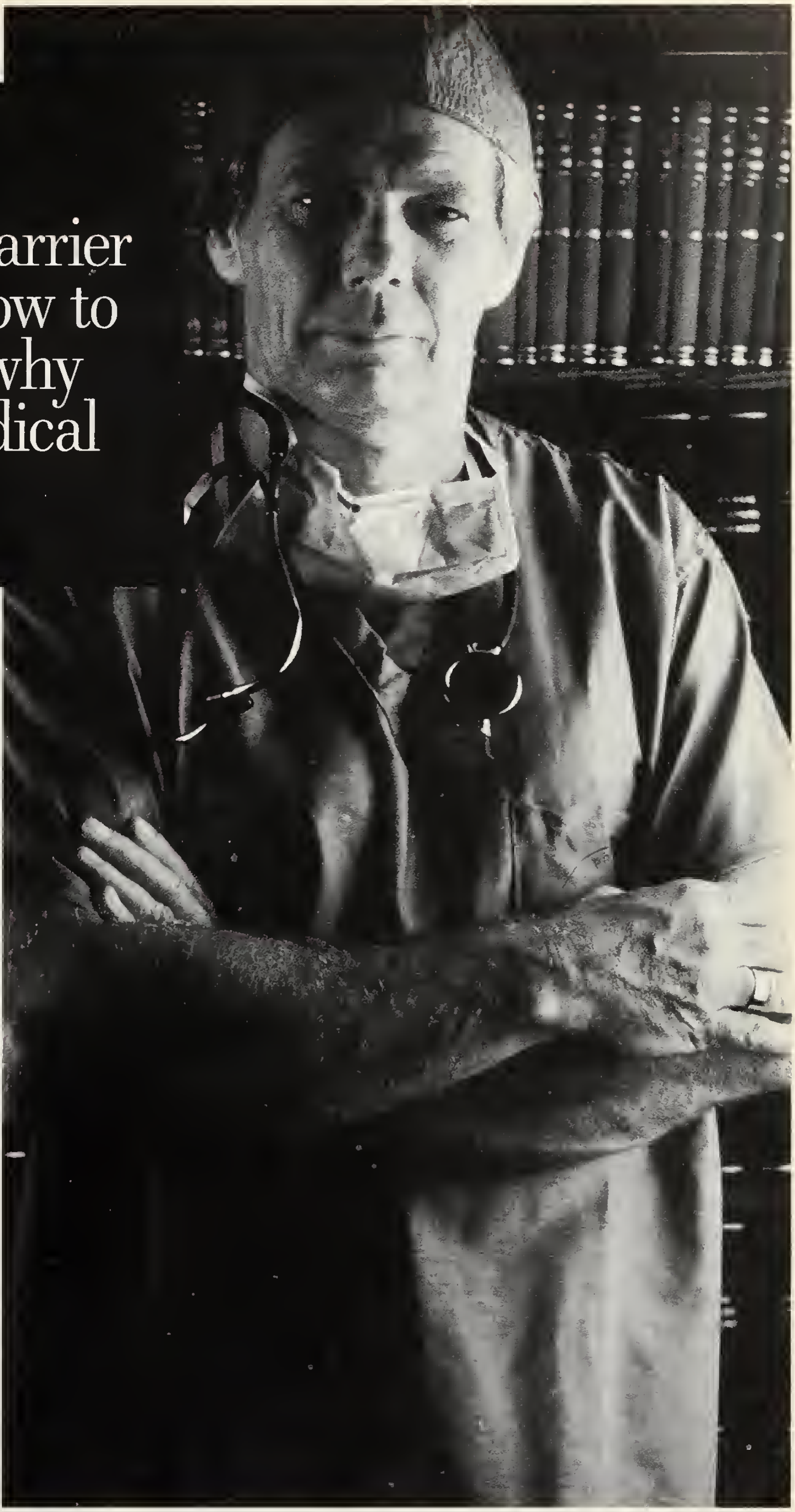
* PPD-positive individuals with abnormal chest X-ray changes, or those in the following special clinical situations: steroid therapy; individuals who have had their stomachs removed; those with leukemia, Hodgkin's disease, diabetes, silicosis, chronic renal failure, AIDS, or positive HIV test; heroin addicts; and children with a positive PPD who develop measles or whooping cough.

How Curable Is TB?

Without drug treatment, TB can spread elsewhere in the lung, or to other organs, and is eventually fatal. With treatment, the prognosis is good, and with the exception of those with advanced neglected disease, the overwhelming majority of victims recover.

The TB test is easy and effective in early diagnosis. Prompt treatment coupled with vigorous public health efforts can eradicate this disease, and make it truly "a disease of the past." ■

This health information feature is provided to you as a public service from your physician and the member physicians of the Missouri State Medical Association.



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SPECIAL SERIES: Chronic Disease Reports

The Prevalence of Nonpharmacologic Measures of Blood Pressure Control in Missouri

Michael Pratt, M.D., M.S., M.P.H.
Atlanta, Georgia
Ross C. Brownson, Ph.D.
Columbia, Missouri

The authors discuss the promising alternative of nonpharmacologic treatment of high blood pressure and whether hypertensive Missourians use the behaviorial strategies to control their blood pressure.

More than 60 million Americans have high blood pressure, putting them at increased risk for stroke, coronary heart disease, congestive heart failure, peripheral vascular disease, and renal disease.[1] As many as 900,000 Missourians may have high blood pressure; in 1988, 46% of the deaths in Missouri were due to cardiovascular diseases, for which high blood pressure is a major risk factor.[2] Over the past two decades, much progress has been made in identifying and treating high blood pressure. However, at least half of identified hypertensives remain uncontrolled, and the cost and side effects of medications pose a continuing problem for many of these individuals.[3,4]

Nonpharmacologic treatment of high blood pressure is a promising alternative or adjunct for many persons with hypertension. Side effects and costs are few, and a growing body of literature is demonstrating the efficacy of weight loss, regular exercise, and reduction in alcohol or salt consumption in lowering blood pressure.[5,6,7,8] Singly or in conjunction with one another, these interventions appear to be capable of lowering diastolic and systolic pressures by approximately 10 mm Hg.[6] We performed analyses to determine whether persons in Missouri with high blood pressure are using these behavioral strategies for controlling blood pressure.

Methods

We used the 1988 Behavioral Risk Factor Surveillance System (BRFSS) to generate prevalence estimates for high blood pressure and health behaviors beneficial in controlling blood pressure. The BRFSS is a cross-sectional, random digit dial telephone survey of health behaviors. Developed by the Centers for Disease Control,[9] it was first used in 1981 and is currently used by 45 states and the District of Columbia.[10] The Missouri Department of Health has conducted the BRFSS annually since 1985. In 1988, 1,356 Missourians aged 18 years and older were surveyed.

Respondents were classified as hypertensive if they reported ever being told by a health professional that their blood pressure was elevated. Single measurements of blood pressure tend to produce overestimates of the prevalence of hypertension, but this may be balanced in part by the association between self reporting and underestimating the prevalence of hypertension.[11,12] Overweight was defined on the basis of body mass indices (BMI) of 27.8 or more for men and 27.3 or higher for women.[10]* Alcohol intake was categorized as either 60 drinks per month or more, or less than 60 drinks per month. Respondents were classified as restricting salt intake if they rarely or never added salt to their food at the table. Persons were defined as regularly active if they participated in at least 20 minutes of activity three or more times per week.

Results

In Missouri in 1988, the prevalence of self-reported high blood pressure among adults was 24.3% (23.3% for men and 24.9% for women). Blacks reported high blood pressure more frequently than whites (29.7% versus 23.9%). Overweight adults reported high blood pressure at more than twice the frequency of normal weight adults (40.7% versus 19.0%).

The prevalence of four health behaviors beneficial in preventing or controlling high blood pressure (moderation of alcohol consumption, weight loss, salt restriction, and regular physical activity) was examined among both self-reported persons with hypertension and those who perceived their blood pressure to be normal (Table 1). Only 5.7% of normotensive persons and 5.8% of self-reported hypertensive persons reported having more than 60 drinks per month. Thus, more than 94% of Missourians reported consuming fewer than 60 drinks per month, regardless of blood pressure status. Self-reported alcohol consumption probably underestimates actual alcohol consumption, but the well-documented association between alcohol intake of two or more drinks per day and elevated blood pressure is also based on self-reported alcohol consumption.[8] Restriction of salt intake was reported by 51.9% of normotensive persons and 67.2% of self-reported hypertensive persons. Among overweight individuals (as determined by body mass indices), little difference existed in the prevalence of attempting weight loss based on blood pressure status.

In Missouri, 68.1% of overweight normotensives and 64.8% of overweight hypertensive persons reported current attempts at losing weight. As might be expected, the prevalence of overweight was substantially higher among self-reported hypertensives than among normotensives (39.6% versus 18.2%). Among the small sample of blacks surveyed in Missouri, the disparity was even more marked (55.6% versus 19.5%). Regular physical activity was reported by 42.2% of normotensives and only 31.9% of self-reported hypertensives. Those with hypertension who had been prescribed medications for blood pressure control were no more likely to be regularly active (30.1%). Physical activity was the only one of the four nonpharmacological behaviors examined in which self-reported hypertensives were significantly less likely to engage than their normotensive counterparts (Fig 1). Those with hypertension were more likely to limit their salt consumption than normotensive persons while differences in alcohol intake and weight loss attempts were not significant.

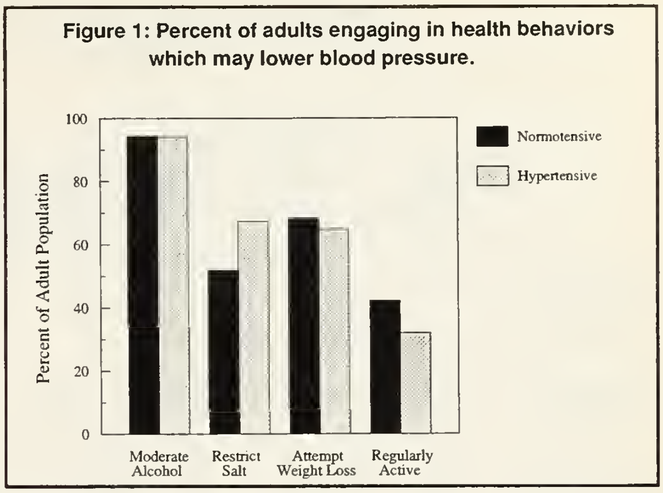

Fig. 1.

Discussion

Results from the 1988 BRFSS indicated that nearly one quarter of Missouri adults have elevated blood pressure. A substantial majority of these self-reported hypertensives, as well as their normotensive counterparts, were moderating their alcohol and salt intakes and attempting to lose weight if necessary. The cross-sectional nature of the BRFSS does not allow us to determine whether these behaviors were prompted by the discovery of high blood pressure. Nor is it possible to determine whether these behaviors were encouraged by physician counseling or were adopted independently. National surveys do indicate that physicians are apt to counsel their hypertensive patients regarding salt restriction, weight loss, and, to a lesser extent, physical activity.[13]

Our data suggest that too few Missourians engage in regular physical activity for controlling their blood pressure. Only 31.9% of adults aware of having high blood pressure participated in regular physical activity; these proportions were lower among women (28.9%) and blacks (18.4%). Hypertensive Missourians may be dissuaded by the inherent difficulty of adopting a complex new behavior such as physical activity,

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*Body mass index = weight [kg]/height[m^2]. The values of 27.8 and 27.3 represent the sex-specific 85th percentile of BMI for U.S. 20-29 year olds, estimated from the Second National Health and Nutrition Examination Survey.

Table 1
Prevalence of Health Behaviors That Can Modify Blood Pressure in Self-Reported Normotensive and Hypertensive Persons in Missouri

	Normotensive (%)					Hypertensive (%)				
	Total (n=1026)	Men (n=412)	Women (n=614)	White (n=907)	Black (n=90)	Total (n=329)	Men (n=125)	Women (n=204)	White (n=284)	Black (n=38
Fewer Than 60 Drinks per Month	94.3	87.6	98.9	95.0	88.9	94.2	87.2	98.5	94.7	94.7
Restricting Salt Intake	51.9	42.6	58.1	52.7	48.9	67.2	59.2	72.1	67.6	63.2
Attempting Weight Loss	68.1	57.0	76.7	67.9	70.6	64.8	57.4	70.4	60.2	85.0
Regular Physical Activity	42.2	40.5	43.3	43.0	34.4	31.9	36.8	28.9	34.2	18.4

or may be inadequately, inappropriately, or ineffectively counseled by health professionals. Whatever the cause, additional efforts seem necessary to educate health care providers, persons with hypertension, and the general public about the use of regular physical activity for controlling high blood pressure.

Exercise Prescription Resources

The physician interested in learning more about exercise prescription can turn to several good sources. The American College of Sports Medicine (ACSM) publishes *Guidelines for Graded Exercise Testing and Exercise Prescription*; it is available from ACSM, P.O. Box 1440, Indianapolis, IN 46206-1440, 317/637-9200. The Stanford Center for Research in Disease Prevention, 1000 Welch Road, Palo Alto, CA 94304-1885, 415/723-0003, has published materials on clinical exercise prescription, including walking and jogging "kits," and has produced a community-oriented guide, *Promotion of Physical Activity in the Community: A Manual for Program Implementation.* The Centers for Disease Control has developed *Promoting Physical Activity Among Adults: A CDC Community Intervention Handbook,* which is available from CDC's Cardiovascular Health Branch, 1600 Clifton Road, Mail Stop F-46, Atlanta, GA 30333. The U.S. Preventive Services Task Force's recently published *Guide to Clinical Preventive Services* includes excellent summary chapters on exercise and nutritional counseling.

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The Authors

MICHAEL PRATT, M.D., M.S., M.P.H.
ROSS C. BROWNSON, Ph.D.

Dr. Pratt is EIS Officer with the Centers for Disease Control in Atlanta, Georgia. Dr. Brownson is Director of the Division of Chronic Disease Prevention and Health Promotion, Missouri Department of Health, Columbia, Missouri.

Reprints

Michael Pratt, M.D., M.S., M.P.H.
Cardiovascular Health Branch
Division of Chronic Disease Control and Community Intervention
Center for Chronic Disease Prevention
and Health Promotion
Centers for Disease Control
1600 Clifton Road NE
Mailstop F-46
Atlanta, GA 30333

Pancreatitis Coexisting With A Large Cystadenoma of the Pancreas

Robert A. Wright, D.O.
St. Louis, Missouri

The author presents a case report of a patient in whom cystadenoma of the pancreas was, at initial diagnosis, mistaken for pancreatic pseudocyst.

Cystadenoma of the pancreas may be mistaken for pancreatic pseudocyst. Accurate preoperative diagnosis is desirable because proper treatment of a possibly premalignant cystadenoma is excision rather than drainage. The presence of pancreatitis strongly favors the diagnosis of pseudocyst. Several reviews[1-6] on cystic neoplasms of the pancreas have either emphasized that pancreatitis does not coexist with large cystic neoplasms or failed to mention any association. I report one patient in whom the association existed, making the differentiation between pseudocyst and true cyst more difficult than usual.

Case Report

A 26-year-old woman was admitted to Deaconess Hospital, St. Louis, with a one-month history of mid-epigastric pain. She denied having nausea, vomiting, diarrhea, fever, or weight loss. There were no risk factors for the development of pancreatitis. On physical examination she appeared well and had normal vital signs. She had mild guarding in the mid-epigastrium and left upper quadrant of the abdomen. A CT scan of the abdomen revealed an 8 cm cyst located between the distal body and tail of the pancreas (Fig 1). Ultrasound examination of the gallbladder was normal. Laboratory tests gave the following results: serum lipase of 40 IU/dL (4-24 IU/dL, and hyperamylasemia, which was 1010IU/L (25-115IU/L) at admission, peaked at 1638 IU/L.

The patient was thought to have pancreatitis with pancreatic pseudocyst. She was kept nil per os and total parenteral nutrition (TPN) was started with plans for elective surgery after the pseudocyst wall matured. She was discharged on the 10th hospital day, clinically improved, with a serum amylase of 467 IU/L. She was kept nil per os and continued on home TPN.

The patient was readmitted and underwent laparotomy approximately two weeks after her first hospitalization. At operation, a 10 X 12 cm cyst was drained into the jejunum. The cyst wall appeared thick and was surprisingly non-adherent to surrounding structures. Dark brown cystic fluid was aspirated. Analysis of the fluid showed an amylase level of 21,750 IU/L. A biopsy of the cyst wall showed the cyst was a cystadenoma, not a pseudocyst. The patient was taken back to surgery five days later for complete resection of the cyst. Pathological examination confirmed the diagnosis of cystadenoma of the mucinous type as well as pancreatitis in the tail of the pancreas (Fig 2). The patient recovered uneventfully from both operations and has remained well over the past year.

Comment

True cystic neoplasms of the pancreas are rare and usually cause dyspepsia, pain, weight loss, and an abdominal mass. Pancreatitis that precedes detection of a large cystic mass or coexists with such a mass is most unusual. Sarles[7] reported a case of pancreatitis

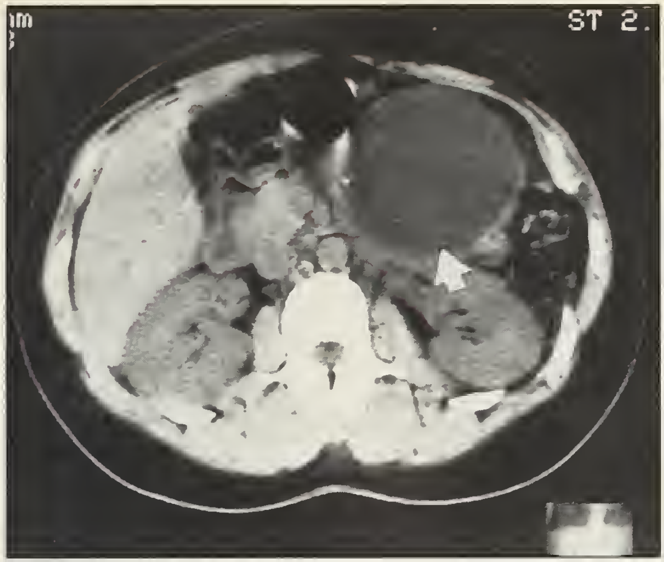

Fig. 1. CT scan of abdomen demonstrating large cystadenoma of the pancreas (arrow).

with a small (5 mm) cystadenoma which was obstructing the main pancreatic duct and causing an obstructive pancreatitis. Smith[8] reported a patient with pancreatis coexisting with a large cystadenoma of the pancreas. However, that patient had taken a thiazide diuretic, which is known to cause pancreatitis. Large cystadenomas are believed to displace pancreatic parenchyma and are usually surrounded by normal pancreatic tissue. Although neoplastic cysts differ from pseudocysts in many ways, precise diagnosis may be difficult. Serious errors in management can result. Warshaw and Rutledge[6] have outlined several of the clinical, laboratory, and radiographic differences between neoplastic cysts and pseudocysts, emphasizing that only careful biopsy can distinguish between these lesions.

This patient's history and findings at surgery (lack of inflammation) were the only clues that favored the diagnosis of a true cyst. The presence of pancreatitis with an elevation of the serum amylase, the radiographic appearance, and the high amylase level in the cystic fluid all favored a diagnosis of pseudocyst. This is a most unusual case of pancreatic cystadenoma, which underscores the importance of careful biopsy to ensure a correct diagnosis and hence proper treatment.

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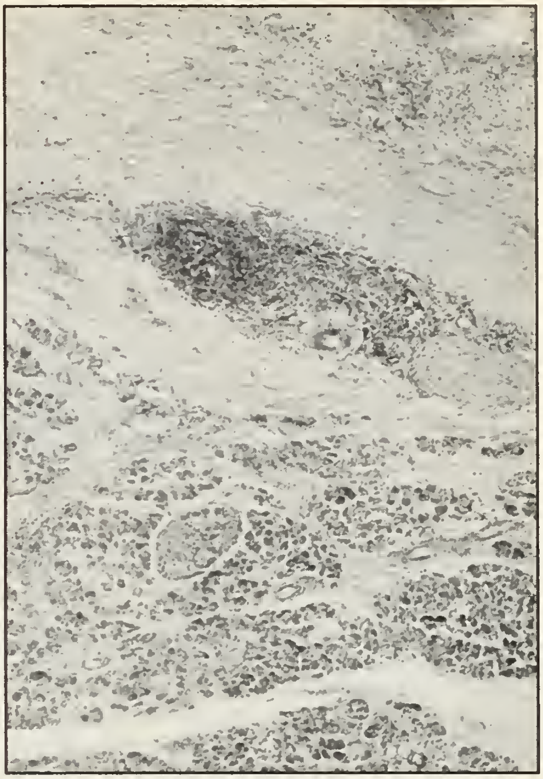

Fig. 2. Photomicrograph of pancreas demonstrating fibrosis and chronic inflammation. (H & E, X 4.

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The Author

ROBERT A. WRIGHT, D.O.

Dr. Wright is a clinical instructor of internal medicine at Deaconess Hospital in St. Louis, Missouri.

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Robert A. Wright, D.O.
Clinical Instructor, Internal Medicine
Deaconess Hospital
6150 Oakland Avenue
St. Louis, MO 63139

Superior Sulcus Tumors

Marcus A. Meyer, M.D., and **Keith S. Naunheim, M.D.**
St. Louis, Missouri

Superior sulcus tumors are rare primary pulmonary tumors of the thoracic inlet that have a distinct presentation. In this article, the authors stress currently accepted measures in the diagnosis, surgery and postoperative treatment of superior sulcus tumors.

In 1924 Henry Pancoast described a clinical syndrome diagnostic of an apical chest tumor, which today bears his name. The earliest report of an entity involving local pain, ulnar neuropathy, Horner's syndrome, and vertebral invasion was made by Hare in 1838. It remained for Dr. H.K. Pancoast, then chairman of the Section on Radiology of the American Medical Association, to advance the concept of a pulmonary tumor. He proposed that the syndrome was due to a "new" tumor type that derived from an embryonal crest: superior pulmonary sulcus tumor. True Pancoast tumors in the original characterization were to be differentiated from other lung tumors that might encroach on the same region. Pancoast tumors would originate in the apex as an almost imperceptible pleural thickening. Local invasion of nerves and bone would produce symptoms at a comparatively early stage of growth before the mass was prominent radiographically.

Since this description, which was elaborated by Paulson, it has been established that Pancoast tumors are not a distinct histologic entity, but can evolve from various lung tumors of the thoracic inlet. The common denominator of these lesions is the involvement of the lower cervical and upper thoracic nerve roots of the brachial plexus, involvement of the sympathetic chain, including the stellate ganglion, and erosion of the first, second or third thoracic ribs.[1,2] Prior to 1950, these tumors were regarded as uniformly fatal, and even palliative radiotherapy was felt to be of little or no benefit. A first curative report with brachytherapy was made by Binkley in 1950. Later, Chardack and MacCullum in 1956 reported management of a right upper lobe mass with resection of the mass followed by 6500 rad external beam irradiation. Because of the tumor's dense infiltration into the surrounding structures at the thoracic inlet, there had been no prior successful resection. In 1961, Shaw and colleagues advocated the use of preoperative radiotherapy of 3000 rad in 12 fractions followed by en-bloc resection of the involved chest wall, intercostal nerves, ganglion and a portion of the sympathetic chain together with the affected lung. Paulson reported a 34% five-year survival of those completing combined treatment, and ushered in the era of modern care for such patients.[3]

Presentation

Approximately 75% of all patients with Pancoast tumors are male, ranging from 30 to 75 years old, with a long history of tobacco use. The duration of symptoms prior to initial presentation is less than six months in the majority of patients.[4] The most frequent and often the primary complaint in these patients is pain involving the shoulder. The pain is steady, severe and unrelenting, often involving the scapular area and radiating to the anterior chest, axilla, and proximal arm. Sensory disturbances with an ulnar distribution

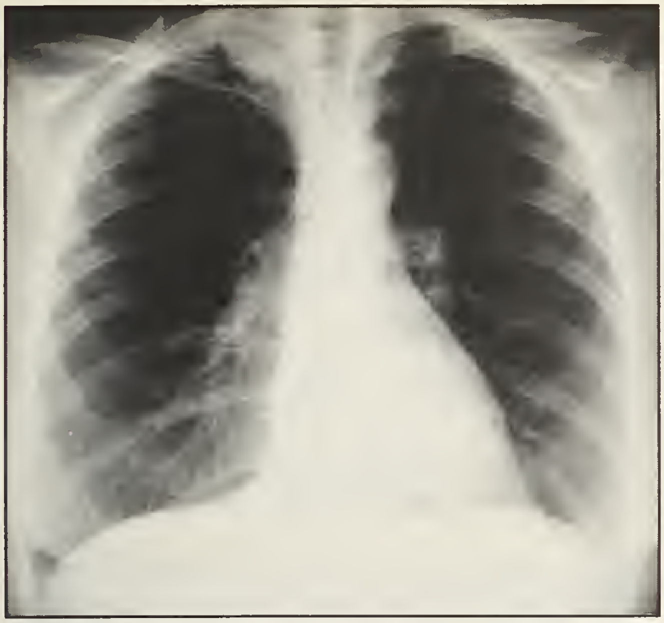

Fig. 1. Chest X-ray showing right apical tumor with involvement of first rib.

and weakness or atrophy of muscles of the hand, indicating involvement of the brachial plexus and ulnar neuropathy, is present in more than 40% of patients. Horner's syndrome (ptosis, miosis, and anhydrosis on the ipsilateral side of the tumor), either partial or complete, is also present in a large number of patients. As one would expect from the peripheral location of these tumors, pulmonary symptoms, such as hemoptysis and dyspnea, are rare. Supraclavicular or cervical lymph nodes may be palpable. Spinal cord involvement, paraplegia, recurrent laryngeal nerve paralysis, phrenic nerve paralysis and superior vena cava syndrome may also occur. (Fig 1).

Pathophysiology

The neurologic structures affected by superior sulcus tumors include the brachial plexus and the sympathetic chain. These may be involved either by direct neoplastic invasion or by compression by the tumor mass. The nerve roots from C5 to T1 unite to form superior, middle, and inferior trunks approximately 4 cm from the cervical spine. These trunks divide into a posterior, lateral and medial cord about 7 cm from the spine and travel beneath the clavicles and coracoid processes to the upper part of the axilla, where they form the ulnar, median and radial nerves. Pain may be the result of direct involvement, e.g. the upper shoulder, or referred pain over the scapula, axilla or anterior chest. The ulnar nerve is formed by the C7 and C8 nerve roots and is the most frequently involved nerve root due to its inferior location and proximity to the

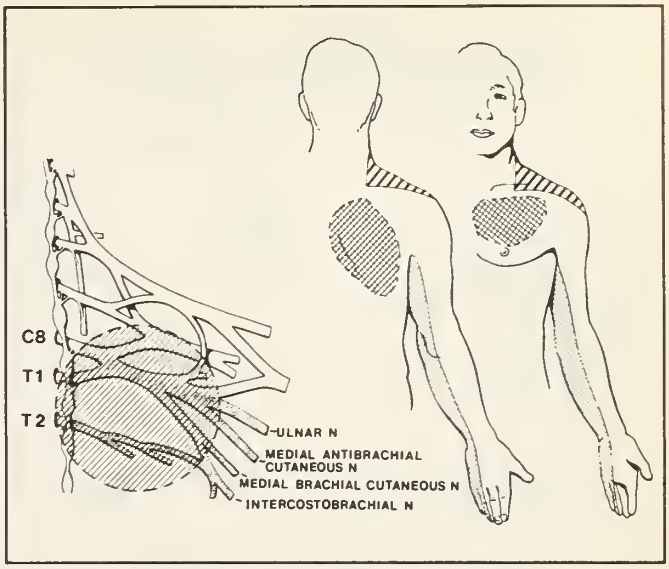

Fig. 2. The neurologic structures involved by superior sulcus tumor: nerve roots at the eighth cervical and first and second thoracic levels, the lower trunk of the brachial plexus, and the sympathetic chain. The areas of direct and referred pain are shaded. Not shown: associated Horner's syndrome. (Adapted from Attar[4]).

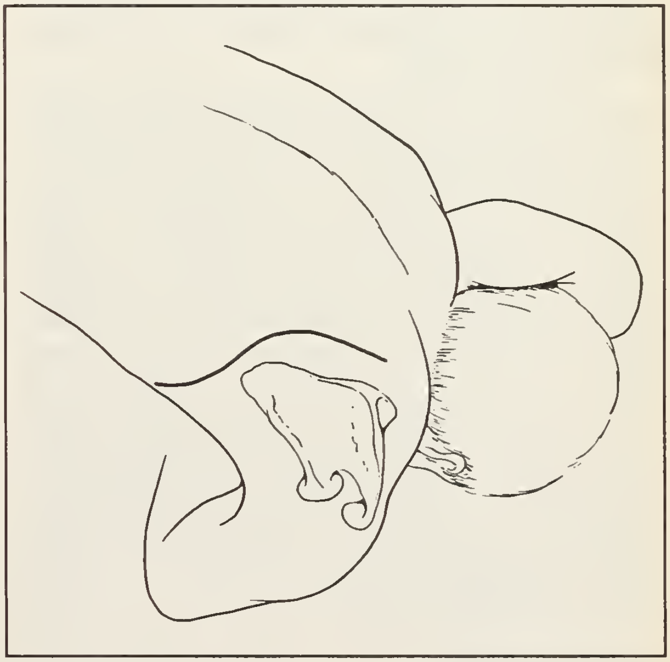

Fig. 3. Patient in lateral decubitus position with incision starting high on the thorax between the scapula and vertebral column and brought inferior to the tip of the scapula and curved anteriorly. (Adapted from McElvein[6]).

Table 1
Distribution of histologic tumor cell types in 73 patients with Pancoast tumors

Cell Type	Total Percent
Squamous cell	47%
Undifferentiated	18%
Adenocarcinoma	14%
Mixed adenocarcinoma	5%
Alveolar cell	1%
Undetermined	15%

Adapted from Attar[4]

Table 2
Five year survival in patients with Pancoast tumors receiving preoperative irradiation and extensive resection among different study groups

Paulson[3]	1975	34%	n=92
Miller[7]	1978	32%	n=26
Attar[4]	1979	23%	n=19
Hilaris[2]	1987	29%	n=82

lung. The ulnar nerve innervates the flexor carpi ulnaris, the fourth and fifth digit deep flexors, the abductor, opponens, and short flexor of the hypothenar eminence, the interossei, inner lumbricales, adductor and inner head of the short flexor of the thumb. It is these muscles that may become dysfunctional when a superior sulcus tumor affects the ulnar nerve. The sensory portion of the ulnar nerve innervates the medial and posterior aspects of the arm and forearm, as well as the fifth and part of the fourth digits. A Pancoast tumor may cause decreased sensation or severe pain in this distribution (Fig 2).

Horner's syndrome is produced by the compression or destruction of the cervical sympathetic chain. The oculosympathetic system arises from fibers originating in the hypothalamus, which descend in the tegmentum of the brainstem and decussate at the caudal medulla, emerging at the anterior roots of the eighth cervical and first thoracic dorsal segments. They join the sympathetic chain and ascend in the carotid artery sheath to enter the skull. Compression of these structures leaves unopposed sphincter pupillae function which results in miosis. Loss of the sympathetic innervation of the orbicularis muscles of the eyelids and the Mueller muscle of the orbital floor leads to ptosis and endophthalmus, respectively. Sympathetic fibers responsible for sweat gland innervation are also lost, causing anhydrosis, the final component of the triad known as Horner's syndrome.

Preoperative Studies

Appropriate staging is important to determine the resectability of any lung cancer, and this becomes even more important with superior sulcus tumors.[5] Generally, the preoperative evaluation will include serum electrolytes and liver enzymes, arterial blood gas, pulmonary function testing, coagulation studies, EKG, and a computed tomography (CT) or magnetic resonance imaging (MRI), which includes liver and adrenals.[6] Initially, the patient with an upper lung mass is evaluated by noninvasive techniques to determine possible metastatic involvement. Brain and bone scans must be obtained if there are any neurologic or musculoskeletal complaints; however, such scans reveal little in the absence of signs and symptoms.[1,2,4,6,7] The bone scan, although nonspecific, is a very sensitive measure for involvement of bony structures of the superior sulcus or metastases throughout the body.

A tissue diagnosis of the mass should always be sought, in order to exclude the possibility of small cell disease or the improbable occurrence of an aggressive infection, which might mimic a tumor. Although bronchoscopy is mandatory to rule out proximal disease, it is rarely helpful in making the histologic diagnosis of malignancy due to the extreme peripheral location of the cancer.[4,6] If palpable lymph nodes are present in the anterior cervical chain or supraclavicular region, a biopsy should be obtained. If positive, the biopsy results will both make the diagnosis and help establish the stage of the tumor. The percutaneous needle aspiration of the lung mass is appropriate for tissue diagnosis, and is best performed using CT guidance. Although various techniques have been advocated, including ultrasonically guided needle biopsy, none has improved upon CT-guided biopsy[8] (Table 1).

The initial enthusiasm for MR imaging of lung tumors since its introduction has recently been tempered by reports indicating no demonstrable advantage in staging accuracy when compared to CT scans. However, MRI appears to have an inherent advantage over CT scanning in the evaluation of the superior sulcus. In this region, many of the crucial structures, such as the brachial plexus and subclavian vessels, take on a horizontal orientation, which an axial CT scan cannot discriminate. The use of the T1-weighted

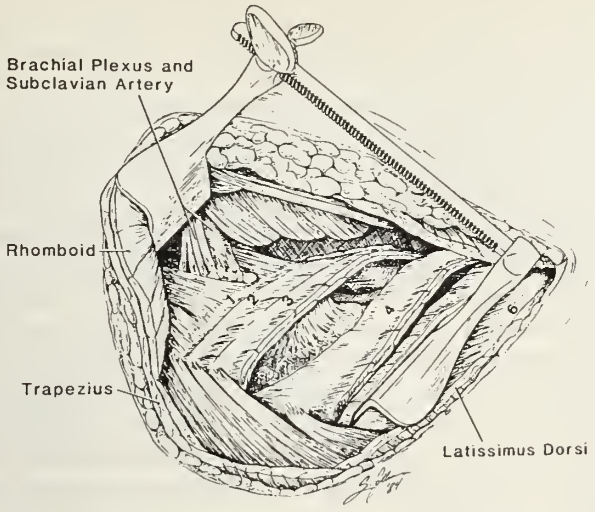

Fig. 4. Placement of Tuffier retractor and separation of fibers of serratus muscles provides exposure of the first rib, brachial plexus and subclavian artery. (Adapted from McElvein[6])

Table 3
Analysis of five year survival in patients with Pancoast tumors per tumor staging, nodal status, and metastases

Stage	5-Year Survival	n	Treatment
T3 N0 M0	49.7%	16	irradiation and resection
T3 N1 M0	13.1%	12	irradiation and resection
T3 N2 M0/ T3 N0 M1	5.5%	25	palliative irradiation

Adapted from Stanford[5] data from 53 patients

MR image (cardiac gated, 5 mm section, two excitation) in the coronal and sagittal views allows a more sensitive and accurate evaluation of this region, although this has not proven true for the remaining thorax or abdomen.[9] This evaluation is particularly important to rule out involvement of structures of the superior sulcus, which would contraindicate curative resection.

Invasive staging has proven extremely important to gauge the extent of tumor involvement. By definition, all Pancoast tumors are class T3 tumors, but the differentiation between stage IIIa and IIIb is necessary to determine the prognosis and resectability of the tumor.[5] Mediastinoscopy is mandatory to evaluate mediastinal node involvement, a finding which renders the cancer virtually incurable. Through a cervical incision, lymph nodes can be acquired from the subcarinal tracheo-bronchial angle, and both upper paratracheal regions. The procedure is associated with infrequent complications, including hemorrhage, tracheal injury, esophageal injury, pneumothorax and recurrent nerve palsy. It is a highly informative procedure to rule out N2, N3, or T4 disease, with a less than 10% false negative rate. Disadvantages associated with this technique include poor exposure of the posterior mediastinum and general anesthesia. It is an attractive staging option compared with use of open thoracotomy. If additional evaluation is required, cervical mediastinoscopy may be combined with a parasternal mediastinotomy (Chamberlain procedure).[10] Finally, one must evaluate the pulmonary status of patients for whom lung resection is contemplated. Using pulmonary function studies it is possible to identify patients with adequate pulmonary reserve to withstand therapeutic procedures and also to identify those in whom complications are likely.[11,12]

Radiation Therapy

Preoperative radiation has become standard procedure in the treatment of Pancoast tumors, yet there is no standardized, widely accepted protocol for the administration of external irradiation. In the preoperative setting, patients usually receive 3000 to 5000 rad to an anterior chest port in approximately 20 fractions. This is followed by a two-to-four week rest period prior to operation. Complications may arise from radiotherapy, particularly dysphagia. Doses exceeding 6000 rad can result in radiation myelopathy. Histologic examination of the irradiated tumor frequently reveals no viable tumor cells, although this does not correlate with long-term survival in these patients.[1,2,4,13] In the patient with inoperable or incompletely resected tumor, external and interstitial irradiation have been tried. Postoperative radiation therapy is indicated for patients with intraoperative findings of mediastinal lymph node involvement or incompletely resected tumor. In 1971 Hilaris at Sloan-Kettering achieved a five-year survival of 16% using interstitial implantation of radon in patients with unresectable lesions.[4] Permanent implantation of iodine 125 seeds, temporary implantation of iridium 192 afterloading tubes, and external beam irradiation have been suggested for patients with unresectable tumor. After operation, using this approach, some have reported significantly improved survival.[1,2,13] The use of postoperative irradiation is specifically directed at areas of residual disease in lymphatics and at the resection margin. The palliative use of external beam irradiation is uniformly associated with recurrence of symptoms, and patients have an average survival of less than six months.[4]

Surgical Treatment

Surgical resection of tumor remains the mainstay of treatment. In one study, surgical treatment without adjunctive therapy was associated with the longest median survival.[4] Prior to surgery, the patient should be informed of the likelihood of the loss of neurologic function, including possible paralysis of the involved extremity. Accepted measures in the perioperative period include prophylactic use of antimicrobials over a 48-hour period and placement of an epidural catheter for postoperative analgesia. Anesthesia is induced using a bilumen intubation technique. The surgical procedure involves an en-bloc resection of the upper lobe and chest wall, usually encompassing the first two or three ribs, including the transverse processes. The T1 branch to the brachial plexus and portions of the sympathetic chain (including the stellate ganglion) are usually sacrificed. For extensive involvement of the spine, a combined neurosurgical thoracic approach has been used[14] (Figs 3 and 4).

Mediastinal, hilar and subcarinal lymph node dissection is performed for final staging. Chest tubes are placed. Atelectasis is a common postoperative complication, and some authors have recommended routine use of mechanical ventilation for two to three days. However, most authors indicate that adequate analgesia and pulmonary toilet will prevent this complication in most patients. Postoperative bleeding is uncommon. If drainage exceeds 500 ml per hour over three hours, reexploration is indicated. Other complications are Horner's syndrome and ulnar nerve deficits. The range of motion of the shoulder may be reduced. Yet, because of the pain patients experience prior to surgery, such impairment is usually accepted because of the marked pain relief.

Results

The prognosis for patients with Pancoast tumors has been significantly improved since the advent of combined radiation and surgical therapy. The dismal reports from the 1950s of no survivors past two years in patients receiving radiation, have now given way to reports of successful five-year survivals of up to 50% in selected patient groups. The single most important prognostic indicator is mediastinal lymph node involvement. All studies show significant decreases in median survival of patients with N2 or N3 disease. Preoperative radiation also appears to have a significant effect on survival, with five-year survival ranging from 20% to 50%. Histological study of the neoplasm indicates that median survival is more favorable in adeno or large cell cancer. This is hopeful, as most studies show a prevalence of these two types over epidermoid cancer. Involvement of the vertebral bodies clearly adversely affects survival. The presence of Horner's syndrome is not so indicative of poor prognosis as mediastinal node involvement.[2] Obviously, involvement of vital structures (spinal cord, major vessels) in tumor growth precludes successful surgical treatment. Recent studies indicate intensive postoperative radiotherapy can improve survival in patients with incompletely resected tumors or mediastinal involvement.[1,2] Distant recurrences are the most common limiting factor in long-term survival. The brain is most frequently involved in metastatic disease, followed by bone and liver. Local recurrence is less frequent, indicating definitive treatment in many patients. As mentioned earlier, preoperative destruction of tumor by radiation is not an accurate indicator for long-term survival, suggesting that all patients should receive postoperative radiotherapy to the maximal dose. Patients living longer than three years following surgery have a greater than 90% chance of lifelong cure. In patients treated solely with radiotherapy, two-year survival was consistently under 20% (Tables 2 and 3).

Discussion

Pancoast tumors are rare, comprising less than 5% of all lung tumors, yet the enormous challenge of this disease has spurred an aggressive study of its management. Great strides have been made in the treatment of this disorder, yet a protocol is necessary. The routine use of both non-invasive and invasive staging techniques is important in order to determine accurately mediastinal involvement. The use of MR imaging of the superior sulcus may prove an important adjunct to evaluation. Radiotherapy is effective not only as palliation for symptoms in those with inoperable disease, but as a vital adjunct in the surgical treatment of the tumors. It appears that postoperative radiotherapy may improve long-term prognosis of patients with extensive involvement, although presently this is speculative.

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The Authors

MARCUS A. MEYER, M.D.
KEITH S. NAUNHEIM, M.D.

Dr. Meyer is an internal medicine resident at St. Mary's Hospital and Medical Center in San Francisco, CA. Prior to beginning his residency, he attended St. Louis University Medical School. Dr. Naunheim is currently associate professor of surgery at St. Louis University Medical Center, specializing in general thoracic surgery. He is also chief of cardiothoracic surgery at John Cochran Veteran's Administration Hospital in St. Louis, Missouri.

Reprints

Keith S. Naunheim, M.D.
Department of Surgery
St. Louis University Medical Center
3635 Vista Ave. at Grand Blvd.
P.O. Box 15250
St. Louis, MO 63110

Paraneoplastic Syndromes of the Nervous System: Manifestations of the Occult and the Obvious

Mohammed J. Zafar, M.D., and **P.K. Sahota, M.D.**
Columbia, Missouri

Cancer patients are plagued by a wide variety of medical problems, among them paraneoplastic syndromes of the nervous system. The authors present a review of some of the syndromes these patients endure.

Paraneoplastic syndromes are among the many medical problems that plague the cancer patient. They are defined as clinicopathologic sydromes that occur more frequently in association with systemic cancer than can be accounted for by chance and which are not caused by metastasis, invasion,[1] compression, metabolic disorders, hemorrhage or infection. Both the central nervous system and the peripheral nervous system may be involved. Peripheral neuropathy is the most common symptom of neurologic involvement. According to several studies, the incidence of paraneoplastic sydromes varies between 7%-20% in patients with cancer, lung cancer accounting for more than 50% of the cases.[2,3,4]

Etiopathogenesis

The etiology of paraneoplastic syndromes is uncertain. Different researchers have proposed viral infections, toxic factors and autoimmunity as possible causes. However, viral infections have been excluded from consideration since the identification of a papovavirus as the cause of progressive multifocal leucoencephalopathy, once considered a paraneoplastic syndrome.

Neurotoxic substances secreted by tumors continue to be considered likely causes of at least some of the paraneoplastic syndromes. For example, small cell carcinomas of the lung are frequently associated with peripheral neuropathy, a paraneoplastic syndrome. Most of these lung tumors secrete parathormone which, incidentally, is also implicated in the pathogenesis of uremic neuropathy. Thus, it is possible that the paraneoplastic peripheral neuropathy associated with small cell cancer of the lung may be caused by or related to secretion of parathormone or other substance by these tumors.

Autoimmunity is also considered a likely etiopathogenetic factor. It is felt that the vulnerable part of the nervous system involved in the paraneoplastic syndrome may share antigenetic determinants with the neoplasm. Significant research of this hypothesis has involved isolated human Purkinje cells. A group of proteins (34-38 kilodalton and 62-64 kilodalton) in human Purkinje cells react specifically with sera from patients with Purkinje cell degeneration associated with tumors of breast, ovary or female genital tract. These proteins are not detectable in the lysates of cerebral cortical neurons or of normal extra neural tissue. In addition, anti-Purkinje cell antibodies have also been found in the serum and cerebrospinal fluid of patients with Purkinje cell degeneration associated with carcinomas of the breast, ovary or genital tract. Therefore, detection of these antineural antibodies in a patient with no known cancer should prompt a careful search for a tumor at the site indicated by the antibody type.[5]

Clinical Syndromes

There are various forms of nervous system involvement in the paraneoplastic syndromes. Disorders of the cerebral hemisphere, brainstem, spinal cord, peripheral nerves, neuromuscular junction and muscle have all been reported (Table 1).

A. Cerebral Involvement: Limbic Encephalitis

This syndrome involves disturbances of affect and impaired memory for recent events. Bizarre behavioral manifestations have also been noted.[6] There may be associated brainstem signs and symptoms predominantly referable to the medulla. Patients may also have generalized tonic-clonic or complex partial type seizures. An important differential diagnosis is herpes simplex encephalitis, as both conditions may involve the medial temporal lobes with similar clinical manifestations. The cerebrospinal fluid in limbic encephalitis is usually normal, but occasionally one may find elevated proteins, pleocytosis and oligoclonal bands. The electroencephalogram often shows slow waves in the temporal region. Histopathologically, extensive neuronal loss occurs mainly in the medial part of the temporal lobe. The patient usually progresses to dementia, although some are fortunate to stop short of total disability. There is no known effective treatment for this condition.

B. Cancer Associated Retinopathy (CAR syndrome)

This occurs with oat cell cancer of the lung and clinically appears as a gradual, painless loss of vision.[7] The cerebrospinal fluid shows mild pleocytosis. The eye tissue shows loss of rods and cones on histopathologic examination. The possible causes of the condition include direct damage by cancer products, an autoimmune mechanism or both. The serum of patients with CAR syndrome has been found to contain immunoglobulins directed against protein antigens in both the retinal and tumor cells. There is no specific treatment for this condition.

C. Brainstem Encephalitis

The clinical manifestations of this syndrome vary with the region of the brainstem that is most severely involved. Patients who have predominant involvement of the pons and medulla have symptoms of vertigo, loss of hearing, facial numbness, dysphagia, and dysarthria.[8] Physical examination may reveal nystagmus, sensorineural hearing loss, dysarthria, weakness and atrophy of the tongue and the palatal muscles. If the diencephalon or midbrain are primarily involved, the patient presents with ptosis, ophthalmoplegia and conjugate gaze palsies.[9] To date, no treatment is effective.

D. Cerebellum

1. *Subacute Cerebellar Degeneration*: The most common cause of this syndrome is breast cancer. Ovarian tumors, small cell cancer of the lung, Hodgkin's disease and GI neoplasms can also be associated with or preceded by subacute cerebellar degeneration.[10] The interval between onset of symptoms of cerebellar dysfunction and the diagnosis of cancer ranges from one month to eight years, with a mean interval of 20 months. Initial manifestations include unsteadiness and dysarthria. Opsoclonus has also been described. Recently, a number of antibodies directed at the Purkinje cell have been detected in the serum and CSF of these patients.[11] These anti-Purkinje cell antibodies are detectable in about 50% of patients with subacute cerebellar degeneration associated with ovarian or breast cancer. A recent report by Brashear et al. describes three patients with ovarian tumors who were neurologically normal but had high titers of anticerebellar dysfunction.[12] The detection of anticerebellar antibodies may be helpful in differentiating paraneoplastic cerebellar degeneration from drug-induced cerebellar dysfunction. Computerized tomography (CT) can show cerebellar atrophy.[13] This syndrome may resolve following removal of the tumor.

2. *Opsoclonus Myoclonus Syndrome:* This is also known as the dancing eyes-dancing feet syndrome. This syndrome occurs most commonly in children with neuroblastoma.[14] It has also been described in eight adults with lung tumors. A syndrome resembling opsoclonus myoclonus can also occur following nonspecific upper respiratory or gastrointestinal illness. The cerebrospinal fluid in patients with paraneoplastic opsoclonus-myoclonus syndrome may be normal or may show lymphocytosis with elevated immunoglobulins. Histologically, there is loss of Purkinje cells from the cerebellar cortex. Opsoclonus myoclonus disappears after treatment of the tumor, but patients who survive frequently suffer mental retardation.

E. Spinal Cord Syndromes

1. *Necrotizing myelopathy:* This rare syndrome usually begins as an acute fulminant transverse myelopathy with ascending motor and sensory involvement. It is most commonly associated with lymphomas and bronchogenic carcinoma.[15] The CSF shows elevated protein and pleocytosis. Myelography may show swel-

Table 1
The Spectrum of Paraneoplastic Diseases of the Nervous System

	Site	Type	Underlying Malignancies
a.	Cerebral	Limbic encephalitis	Oat cell-lung
b.	Optic Nerve	Cancer-associated retinopathy	Oat cell-lung
c.	Brainstem	Brainstem encephalitis	Carcinomas
d.	Cerebellum	Subacute cerebellar degeneration	Lung, ovary, breast, lymphoma
		Opsoclonus-myoclonus syndrome	Carcinoma, neuroblastoma
e.	Spinal cord syndromes	Dorsal root ganglionitis Necrotizing encephalopathy Paraneoplastic poliomyelitis Subacute motor neuropathy	Small cell lung cancer Lymphomas
f.	Peripheral Nerve	Polyneuropathies	Lung cancer
g.	NMJ	Myasthenia Gravis Eaton-Lambert syndrome	Thymomas Lung cancer
h.	Muscle	Polymyositis dermatomyositis Myotonia Neuromyopathy Carcinoid myopathy	Lymphomas, visceral and hematologic malignancies

ling of the cord. There is a single report of magnetic resonance imaging (MRI) in a patient with necrotizing myelopathy. This showed high signal without evidence of swelling in the cervical cord.[16] Histopathologic examination of the spinal cord reveals degenerative changes in both the white and gray matter. Differential diagnosis of this syndrome includes viral myelitis, post-infectious myelitis and multiple sclerosis.

2. *Dorsal root ganglionitis:* (subacute sensory neuropathy) Usually associated with encephalomyelitis, this syndrome is clinically characterized by subacute loss of all sensation in the feet and legs, with areflexia. Half of these patients have mental status changes. An autoimmune mechanism[17] is postulated for this syndrome, which is nevertheless unresponsive to steroids or immunosuppressant therapy.

3. *Paraneoplastic poliomyelitis:* This syndrome is characterized by progressive muscular weakness and atrophy, which may be bilateral and asymmetrical.[18] Differential diagnosis of this syndrome includes amyotrophic lateral sclerosis, which itself has been reported as a remote manifestation of cancer.

4. *Subacute motor neuropathy:* This is a form of motor neuron disease usually seen in patients with lymphomas.[19] Electromyogram and muscle biopsy show evidence of denervation. The condition is clinically similar to paraneoplastic poliomyelitis but runs a milder course, with full neurologic recovery possible.

F. Peripheral Neuropathies

Peripheral neuropathy is by far the most common paraneoplastic syndrome; it is usually a distal sensory motor polyneuropathy characterized by weakness, sensory loss and areflexia. The onset may be acute, subacute or chronic. Pathologically, there is either segmental demyelination or Wallerian degeneration of the motor and sensory peripheral nerves. Deposition of imunoglobulin M and complement have been described in the sural nerves of patients with cancer and sensory motor neuropathy. Paraneoplastic peripheral neuropathy may also occur in association with monoclonal gammopathies (of myelomas), primary systemic amyloidosis and insulinomas.

G. Neuromuscular Junction

1. Myasthenia gravis is mentioned here because of its association with thymoma.[20] About 30% of patients with thymoma have myasthenia gravis and about 10%-20% of myasthenics have a thymoma.

2. Eaton-Lambert myasthenic syndrome: More than 80% of patients with this syndrome have bronchogenic carcinoma,[20] but recently, it has been noted that in some of these patients, cancer never develops. This syndrome can also occur with lymphoma, and cancer of the breast, prostate, stomach and rectum. The presenting symptoms are proximal muscle weakness and aching. Confirmation of the diagnosis is achieved by a characteristic finding on repetitive nerve stimulation: On supramaximal stimulation of a motor nerve, the initial compound muscle action potential is diminished; on repetitive nerve stimulation at 20-50 Hz, an increment in amplitude is noted.

H. Muscle

Different studies have found the incidence of cancer-associated polymyositis-dermatomyositis to be between 6.7% and 34%.[21,22] Dermatomyositis occurs more frequently with cancer than polymyositis. The mean age of patients with cancer-associated polymositis is 62 years, 15 years more than the mean age of patients with polymyositis without cancer.[22] The syndrome is characterized by painless, symmetric proximal muscle weakness. The diagnosis depends on finding elevated muscle enzymes, characteristic EMG abnormalities of brief, small-amplitude muscle action potentials, and the pathologic finding of muscle inflammation, with degeneration and regeneration of muscle fibers. Other rare forms of muscle involvement by paraneoplastic syndromes include myotonia,[23] neuromyopathy and carcinoid myopathy.

Evaluation

Thorough periodic physical examination is essential in the evaluation of patients with suspected paraneoplastic syndromes. In children with opsoclonus-myoclonus, elevated levels of urinary catecholamines are found to be quite specific for neuroblastoma.[24] Because most of these syndromes are thought to have an autoimmune basis, anti-neuronal antibodies may be estimated in the serum and CSF of patients with neurologic involvement. Examples of these antibodies are anti-Purkinje cell antibody in subacute cerebellar degeneration, auto-antibodies against neuronal nuclear antigen in patients with neurologic dysfunction in small cell lung cancer, and autoantibodies against retinal ganglion cells in patients with cancer-associated retinopathy.

It is also important to look for monoclonal gammopathies in patients with certain types of polyneuropathies and motor neuron syndromes. In adults, a chest X-ray is useful, especially in those with late-onset cerebellar degeneration, polymyositis-dermatomyositis, and Eaton-Lambert myasthenic syndrome, as well as myasthenia gravis. When the patient with cancer has a rapidly progressive myelopathy, myelography should be performed immediately to rule out a treatable lesion such as metastatic cord compression. A CT scan of the mediastinum or abdomen may be indicated when the chest X-ray is interpreted as normal, but the clinical suspicion of an underlying tumor remains. Thus, depending on the clinical situation (evidenced by thorough history and physical examination), the following tests may be helpful:

1) *Hematological:* hemeprofile and differential, peripheral smear, ESR
2) *Biochemical:* serum protein electrophoresis, urinary catecholamines
3) *Immunological:* e.g., anti-Purkinje cell antibody
4) *Electrophysiological:* electromyography and nerve conduction studies, electroencephalography
5) *Radiological:* chest X-ray, myelography, CT scan, MRI

Treatment

1. *Treatment of the associated malignancy:* Therapy aimed at the underlying malignancy has been found to resolve some of the paraneoplastic syndromes, including opsoclonus-myoclonus syndrome, cancer-associated retinopathy, subacute motor neuropathy and, rarely, cerebellar degeneration.

2. *Specific therapy:* Eaton-Lambert myasthenic syndrome responds poorly to anticholinesterase medications, but guanidine hydrochloride at doses of 15-40 mg per kg per day has been found useful on a short-term basis. Another medication reported to be effective in treating this syndrome is 3,4-diaminopyridine, in doses up to 100 mg per day.[25] Patients with dermatomyositis respond better to steroid therapy than do patients with cancer-associated polymyositis. Steroids have also been reported to be helpful in cancer-associated retinopathy. Plasma exchange has an uncertain role in peripheral sensorimotor neuropathy,[26] but may be considered when other antineoplastic treatments are unsuccessful, especially if paraproteins are present. For most syndromes (e.g., limbic encephalitis, brainstem encephalitis, necrotizing myelopathy), however, there is no effective treatment known.

Prognosis

The prognosis of most paraneoplastic syndromes is dictated by that of the underlying malignancy. Many of these syndromes may progress, while others halt or resolve to some extent after treatment of the associated cancer.

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The Authors

MOHAMMED J. ZAFAR, M.D.
P.K. SAHOTA, M.D., A.C.P.

Dr. Zafar is a resident physician in the department of neurology at the University of Missouri-Columbia School of Medicine. Dr. Sahota is an assistant professor of neurology and the director of the Clinical Neurophysiology Laboratory at the University of Missouri, Columbia, Missouri.

Reprints

Mohammed J. Zafar, M.D.
University of Missouri-Columbia
School of Medicine
Department of Neurology
M741 Health Sciences Center
Columbia, MO 65212

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8 - 10 **Pediatrics Advanced Cardiac & Trauma Life Support for Life and Pediatric Advanced Life Support (PACTS/PALS)** — Location: Cardinal Glennon Children's Hospital, St. Louis, MO. Contact: St. Louis University CME Office, 1402 S. Grand Blvd., St. Louis, MO 63104-1083. 1-800-553-2712.

9 - 10 **OB-GYN Update** — Location: Holiday Inn Executive Center, Columbia, MO. Contact: Barry Kling, University of Missouri-Columbia School of Medicine, Office of Continuing Education, MA215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

9 - 11 **16th Annual Symposium: Anesthesia and the Geriatric Patient** — Location: Marriott Pavilion Hotel, One Broadway, St. Louis, MO. Contact: S. Mark Poler, M.D., Geriatric Symposium, Dept. of Anesthesiology, Box 8054, Washington University School of Medicine, 660 S. Euclid, St. Louis, MO 63110. 314/362-6973.

10 **Plastic Techniques in Suturing** — Location: Clarion Hotel, San Francisco Airport, San Francisco, CA. Contact: Kay Harris, P.O. Box 62682, 141 Business Park Dr., Virginia Beach, VA 23462. 804/473-2443.

12 **City-Wide Radiology Conference** — Location: Mallinckrodt Institute of Radiology, St. Louis, MO. Contact: R. Gilbert Jost, M.D., Chief of Diagnostic Radiology, Mallinckrodt Institute of Radiology, 510 S. Kingshighway, St. Louis, MO 63110. 314/362-7130.

13 - 15 **Introduction to Doppler Echocardiography** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: St. Louis University CME Office, 1402 S. Grand Blvd., St. Louis, MO 63104-1083. 1-800-553-2712.

16 **The Effect of Sexual Abuse on Body Image** — Location: St. John's Mercy Medical Center, von Gontard Conference Center, St. Louis, MO. Contact: Judith L. O'Guin, St. John's Mercy Medical Center, CME Office, 615 S. New Ballas Rd., St. Louis, MO 63141. 314/569-6290.

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8 **Plastic Techniques in Suturing** — Location: The Westin William Penn, Pittsburgh, PA. Contact: Kay Harris, P.O. Box 62682, 141 Business Park Drive, Virginia Beach, VA 23482. 804/473-2443.

8 - 9 **Excimer Laser Course (Didactic and Wet Lab)** — Location: Eye Foundation of Kansas City, MO. Contact: John W. Irvine, M.D., Eye Foundation of Kansas City, 2300 Holmes, Kansas City, MO 64108. 816/881-6150.

10 **City-Wide Radiology Conference: Color Flow Doppler - Update 1990** — Location: Mallinckrodt Institute of Radiology, St. Louis, MO. Contact: R. Gilbert Jost, M.D., Chief of Diagnostic Radiology, Mallinckrodt Institute of Radiology, 510 S. Kingshighway, St. Louis, MO 63110. 314/362-7130.

1991

January

5 - 10 **Rheumatology for the Practicing Physician** — Location: Keystone Resort, Colorado. Contact: Cathy Caruso, CME Office, Washington University School of Medicine, 660 S. Euclid, Box 8063, St. Louis, MO 63110. 1-800-325-9862 or 314/362-6893.

14 **City-Wide Radiology Conference** — Location: St. Louis University, St. Louis, MO. Contact: R. Gilbert Jost, M.D., Director, Chief of Diagnostic Radiology, Mallinckrodt Institute of Radiology, 510 S. Kingshighway, St. Louis, MO 63110. 314/362-7130.

18 - 19 **Advanced Trauma Life Support Provider Course** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: St. Louis University CME Office, 1402 S. Grand Blvd., St. Louis, MO 63104. 1-800-553-2712.

February

11 **5th Annual Daniel R. Biello Memorial Lecture** — Location: Mallinckrodt Institute of Radiology, St. Louis, MO. Contact: R. Gilbert Jost, Chief of Diagnostic Radiology, Mallinckrodt Institute of Radiology, 510 S. Kingshighway, St. Louis, MO 63110. 314/362-7130.

21 - 22 **Advanced Cardiac Life Support Course** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: St. Louis University CME Office, 1402 S. Grand Blvd., St. Louis, MO 63104. 1-800-553-2712.

21 - 24 **Rhinoplasty** — Location: To be announced. Contact: Cathy Caruso, CME Office, Washington University School of Medicine, 660 S. Euclid, Box 8063, St. Louis, MO 63110. 1-800-325-9862 or 314/362-6893.

March

11 **City-Wide Radiology Conference: Fundamental Observations in Chest Radiology** — Location: Mallinckrodt Institute of Radiology, St. Louis, MO. Contact: R. Gilbert Jost, M.D., Chief of Diagnostic Radiology, Mallinckrodt Institute of Radiology, 510 S. Kingshighway, St. Louis, MO 63110. 314/362-7130.

8 - 9 **4th Annual Contact Lens Course** — Location: Washington University Medical Center, St. Louis, MO. Contact: Cathy Caruso, Washington University School of Medicine, CME Office, 660 S. Euclid, Box 8063, St. Louis, MO 63110. 1-800-325-9862 or 314/362-6893.

8 - 9 **Advanced Trauma Life Support Provider Course** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: St. Louis University School of Medicine, CME Office, 1402 S. Grand Blvd., St. Louis, MO 63104. 1-800-553-2712.

22 **Ninth Annual Symposium on Geriatric Medicine** — Location: Breckinridge Frontenac Inn, St. Louis, MO. Contact: St. Louis University School of Medicine, CME Office, 1402 S. Grand Blvd., St. Louis, MO 63104. 1-800-553-2712.

April

8 **Leroy Sante Lecture** — Location: St. Louis University, St. Louis, MO. Contact: R. Gilbert Jost, M.D., Chief of Diagnostic Radiology, Mallinckrodt Institute of Radiology, 510 S. Kingshighway, St. Louis, MO 63110. 314/362-7130.

11 - 13 **Treatment of Surgical Spine Disease** — Location: The Ritz-Carlton Hotel, St. Louis, MO. Contact: Cathy Caruso, CME Office, Washington University School of Medicine, 660 S. Euclid, Box 8063, St. Louis, MO 63110. 1-800-325-9862 or 314/362-6893.

25 - 26 **18th Annual Obstetrics and Gynecology Symposium** — Location: Washington University Medical Center, St. Louis, MO. Contact: Cathy Caruso, CME Office, Washington University School of Medicine, 660 S. Euclid, Box 8063, St. Louis, MO 63110. 1-800-325-9862 or 314/362-6893.

30 - May 2 **Molecular Basis of Bone Cell Physiology: Transcellular Signaling** — Location: The Sheraton West Port Inn, St. Louis, MO. Contact: Cathy Caruso, CME Office, Washington University School of Medicine, 660 S. Euclid, Box 8063, St. Louis, MO 63110. 1-800-325-9862 or 314/362-6893.

May

1 - 3 **Protection for Research Risk** — Location: The Hyatt Regency, Union Station, St. Louis, MO. Contact: Cathy Caruso, CME Office, Washington University School of Medicine, 660 S. Euclid, Box 8063, St. Louis, MO 63110. 1-800-325-9862 or 314/362-6893.

13 **City-Wide Radiology Conference** — Location: Mallinckrodt Institute of Radiology, St. Louis, MO. Contact: R. Gilbert Jost, M.D., Chief of Diagnostic Radiology, Mallinckrodt Institute of Radiology, 510 S. Kingshighway, St. Louis, MO 63110. 314/362-7130.

16 - 18 **Vascular Surgery 1991** — Location: The New York Marriott Marquis, New York, NY. Contact: Ann J. Boehme, CMP, Associate Director for Continuing Education, Long Island Jewish Medical Center, New Hyde Park, New York, NY 11042. 718/470-8650.

June

20 - 23 **Frontiers in Endosurgery (Urologists only)** — Location: Washington University Medical Center, St. Louis, MO. Contact: Cathy Caruso, CME Office, Washington University School of Medicine, 660 S. Euclid, Box 8063, St. Louis, MO 63110. 1-800-325-9862 or 314/362-6893.

22 - 26 **Back to the Basics in the Tetons** — Location: Jackson Lake Lodge, Jackson, WY. Contact: Julie Potts/Anne Williamson, Missouri Postgraduate Course in Allergy, Inc., Suite A, 24-26 South Main Street, Liberty, MO 64068. 816/781-0902.

July

20 - 27 **9th Annual Medical Seminar, Topics in Contemporary Medicine** — Location: Plummer's Great Slave Lake Lodge, Northwest Territories, Canada. Contact: Joseph F. Bocklage, M.D., 103 Oakdale Medical Center, 3366 Oakdale Avenue North, Minneapolis, MN 55422. 612/588-9478.

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Medical School News

St. Louis University

■ **Bruce R. Bacon, M.D.**, has been named professor of internal medicine and director of the division of gastroenterology and hepatology at St. Louis University School of Medicine.

Bruce R. Bacon, M.D.

Dr. Bacon comes to St. Louis from Louisiana State University, where he served as chief of the section of gastroenterology and hepatology. His primary area of research is the hepatotoxicity of iron overload.

He received the *Peter A.J. Adam Award for Excellence in Research* from Cleveland Metropolitan General Hospital in 1981. In July 1989, Dr. Bacon received the *Marcel Simon Award* for best research in hemochromatosis by a young investigator at the Second International Conference on Hemochromatosis, held in Australia.

■ Two orthopedic spine specialists have joined the faculty of the department of orthopedic surgery at St. Louis University School of Medicine. **J. Kenneth Burkus, M.D.**, and **Steven Mardjetko, M.D.**, will practice in the new St. Louis University Spine/Hand/Rehabilitation Center.

J. Kenneth Burkus, M.D.

Steven Mardjetko, M.D.

Dr. Burkus comes to St. Louis from the University of California-Davis where he was assistant professor in the department of orthopedic surgery. Following residency, he served a clinical fellowship at the Association of Osteosynthesis in Chur, Switzerland, and a Spinal Trauma and Deformity Fellowship at the Minnesota Spine Center in Minneapolis. His particular clinical interests include spinal deformities, spinal fixation devices and spinal cord injuries.

Dr. Mardjetko comes to St. Louis from the University of Illinois School of Medicine in Chicago, where he was assistant professor in the department of orthopedic surgery. In addition, he was chief of the section of spinal surgery at Cook County Hospital. He completed a spinal deformity fellowship at Rush-Presbyterian-St. Luke's Hospital, and a pediatric orthopedic fellowship at Shriner's Hospital in Chicago. Dr. Mardjetko will also practice at Cardinal Glennon Children's Hospital.

■ **John B. Holds, M.D.**, has been appointed assistant professor in the department of ophthalmology, with a secondary appointment as assistant professor in the department of otolaryngology at St. Louis University School of Medicine. The announcement was made by **David J. Schanzlin, M.D.**, professor and chairman of the department of ophthalmology and director of Bethesda Eye Institute.

Dr. Holds specializes in occuloplastics or ophthalmic plastic surgery. He completed a clerkship in clinical ophthalmology at Addenbrookes Hospital, Cambridge University, Cambridge, England.

■ **Sophia M. Chung, M.D.**, has been appointed instructor in the departments of ophthalmology and neurology at St. Louis University School of Medicine. The announcement was made by **David J. Schanzlin, M.D.**, professor and chairman of the department of ophthalmology. Dr. Chung comes to St. Louis from Cullen Eye Institute, Baylor College of Medicine in Houston where she completed her ophthalmology residency and served a fellowship in neuro-ophthalmology.

■ **Robert A. Buzzell, M.D.**, assistant professor of internal medicine, has joined the faculty of St. Louis University School of Medicine's dermatology program. Dr. Buzzell recently returned to St. Louis University after completing his training in dermatology at the University of Missouri-Columbia School of Medicine. He is board certified in internal medicine.

■ **Steven J. Fliesler, Ph.D.**, associate professor of ophthalmology, biochemistry and molecular biology at St. Louis University School of Medicine, has received a $224,372 renewal grant from the National Eye Institute to further his studies on "Glycoprotein Synthesis and Metabolism in Retinas."

■ Bethesda Eye Institute at St. Louis University Medical Center has established five tertiary care ophthalmology offices throughout St. Louis and the metro-east area where patients with acute eye problems can be examined and treated in their area after local ophthalmologists determine more specialized care is needed. Sites are open to patients by referral in Alton, Belleville, and Maryville, Ill. In St. Louis, offices are open in North County and at St. Louis University Medical Center.

The new satellite offices will provide tertiary care not attainable through routine eye visits. Treatment for eye problems such as diabetes complications of the eye, unsuccessful responses to prior treatment of glaucoma, problems of the eye behind the lens, and eye muscle abnormalities is available. The satellite offices also provide complete diagnostic testing, advanced laser technology and ocular pathology services.

Bethesda Eye Institute currently serves as a center of excellence in ophthalmology holding the distinction of being the region's Eye Trauma Center, under the direction of **John C. Galanis, M.D.**

University of Missouri-Kansas City

■ **Louise Arnold, Ph.D.**, has been named assistant dean for Research in Medical Education. Dr. Arnold has served as director of the Office of Medical Education and Research since 1986 and will continue to hold that position.

Under Dr. Arnold's direction during the past several years, the Office of Medical Education and Research has received national and international recognition for research aimed at improving the medical education of students.

Research on the experience of female students in medicine and follow-up studies on graduates in first-year residencies have received widespread attention in publications and at conferences. Results of a study on the medical school's Quarterly Profile Examination appeared in the September issue of *Academic Medicine*, and research on the Partnership System will be reported in the November issue of the journal.

Future research will continue to focus on the experiences of men and women in medical school. Also contemplated is a major effort to track the career development of the school's graduates.

■ **Mark Litzler** has been appointed manager of Alumni/Devlopment for the medical school. He formerly served as assistant director of major gifts at Case Western University, Cleveland, Ohio. **Mary McCamy**, formerly an executive staff assistant in the Dean's Office, will serve as assistant manager of Alumni/Development and coordinator of Special Events.

Together, Litzler and McCamy will work to organize the nearly 1,100 alumni into an advocacy group for the school. One of their first goals is to form an alumni association which will sponsor events and raise funds. A steering committee of alumni will be selected to lay the groundwork for the association. A committee of alumni will continue to meet regularly and direct the activities of the association after it is established.

In addition to alumni activities, Litzler will oversee advancement efforts involving friends of the school and students' parents. McCamy will continue to coordinate special events, help recruit prospective medical students and plan special projects for the Dean's Office.

■ The National Institutes of Health (NIH) awarded **Thomas R. Hamilton, M.D.**, professor emeritus of microbiology, a $330,000 grant for a research project, "Animal Model for Study of Congenital Syphilis Immune Modulation." It is a collaborative effort with **Thomas Fitzgerald, M.D.**, professor of medical microbiology and immunology, University of Minnesota School of Medicine, Duluth.

■ **Setti S. Rengachary, M.D.**, professor of neurosurgery, is the author of the book, *Neurosurgery Update I*, published earlier this year by McGraw-Hill, New York, and *Neurosurgery Update II*, to be published later this year by McGraw-Hill.

■ **Tawfik M.A. Elattar, Ph.D.**, professor of dentistry and medicine, was awarded a $6,356 Weldon Spring Grant for preliminary studies on the effect of vitamin A derivatives on inhibition of oral cancer cell growth.

■ **Dev Maulik, M.D., Ph.D.**, professor in the Department of Obstetrics/Gynecology, was a visiting professor at Dubrovnik, Yugoslavia, in July 1990 to teach ultrasound in perinatal medicine. Earlier this year, he was a visiting professor at the University of Southern California and Cedars-Sinai Medical Center and represented the International Perinatal Doppler Society at the FDA/ALUM/NEMA meeting in Bethesda, Maryland.

■ **Luz S. Racela, M.D.**, led a team of laboratory inspectors for the college of American Pathologists. The team, which included laboratory technologists from Truman Medical Center, inspected the St. Joseph Medical Center in St. Charles, MO.

■ **Steven D. Waldman, M.D.**, clinical associate professor in the Department of Anesthesiology, has been appointed to the editorial board of Headache Pain Digest and also was named a professional liaison for the American Academy of Pain Management.

University of Missouri-Columbia

■ **Bernard Beitman, M.D.**, professor of psychiatry, has been appointed by the National Institute of Mental Health to serve on the Scientific Advisory Committee of the new Panic Disorder Prevention and Public Education Program.

■ **Christian G. Brilla, M.D., Ph.D.**, assistant professor of cardiology, won the Chicago Society of Internal Medicine's Research Award. Dr. Brilla recently came to MU from the Michael Reese Hosital and Medical Center in Chicago.

■ **Susan P. Buckelew, Ph.D.**, associate professor of physical medicine and rehabilitation, presented a symposium October 23 in Phoenix, Arizona, at the annual meetings of the American Academy of Physical Medicine and Rehabilitation, and the American Congress of Rehabilitation Medicine. The symposium was coauthored by five researchers from MU and the Harry S. Truman Memorial Veterans Hospital.

■ Two former residents in the department of family and community medicine, **Melanie E. Elfrink, M.D.**, and **Joseph DePra, M.D.**, have been named winners of the 1990 Parke-Davis Teacher Development Awards. They received two of 12 awards of $1,500 made to selected outstanding physicians who are entering family practice and will be teaching family practice on a part-time basis. The American Academy of Family Physicians formally presented the awards in October at its annual scientific assembly in Dallas.

Elfrink, who has joined MU's School of Medicine as a clinical instructor, is a 1987 graduate of the school and completed her family medicine residency in 1990. She will practice family medicine and routine obstetrics in addition to her teaching duties.

DePra, a 1987 graduate of the Temple University School of Medicine, also completed MU's residency program in 1990. He has moved to Dansville, New York, where he will join the practice of **Paul Frame, M.D.**, who is nationally known for his work in patient health education.

■ **Michael C. Perry, M.D.**, professor and chairman of the department of medicine, has been appointed by the American Society of Clinical Oncology as Proceedings editor for 1991-1996. Perry also recently participated in the National Cancer Institute Workshop on Cancer Pain in Bethesda, Maryland. The purpose of the workshop was to provide guidance to the NCI and other agencies in planning programs to meet the needs of the patients with cancer who also must cope with pain.

■ **Eleanor Shaheen, M.D.**, professor of child health, and **Gail Carlson, Ph.D.**, assistant professor of continuing medical education, have been appointed youth fellows to the Institute for Youth and Family. The institute is part of the Missouri Youth Initiative, a four-year program funded by a $3.6 million grant from the Kellogg Foundation. Youth fellows will identify problems and develop programs and services for children in six demonstration communities.

■ **Donald Silver, M.D.**, professor and chairman of the department of surgery, is president-elect of the Central Surgical Association.

■ **Zbylut J. Twardowski, M.D.**, professor of nephrology, recently made seven presentations at "Ten Years of Continuous Ambulatory Peritoneal Dialysis in Brazil," a symposium in Curitiba, Brazil.

■ **Donald York, Ph.D.**, professor of physiology, has received a five-year, $698,000 grant from the National Institute of Neurological and Communicative Disorders and Stroke for his research into how the brain controls the body's movements. The research eventually may help physicians diagnose the extent of brain damage in stroke patients and others with motor control problems. York presented his findings October 3 at the Fourth International Evoked Potentials Symposium in Toronto, Canada.

■ **Gary A. Dyer, M.D.**, president of the Missouri State Medical Association and a 1966 MU School of Medicine graduate, was honored September 14 by the University of Missouri-Columbia Alumni Association at its 23rd annual Faculty-Alumni Awards banquet.

Dr. Dyer received the Alumni Award, which recognizes excellence and accomplishments in professional life and service to his alma mater.

In addition to serving as president of MSMA, Dr. Dyer practices dermatology in St. Joseph, where he has directed the city's annual Free Skin and Oral Cancer Detection Clinics since 1985. From 1972 to 1974, he served as an assistant professor of dermatology at MU and continues as a visiting clinical professor.

President of MU's Medical School Foundation, Dr. Dyer also is a member of the task force on indigent care at University Hospital and Clinics. He helped start the *Dermatology Endowment Fund*, which led to the *Philip C. Anderson Professorship* in dermatology.

Washington University

■ **George E. Andersson** has been named assistant dean for finance at Washington University School of Medicine in St. Louis.

The appointment became effective October 1. It was announced by **William A. Peck, M.D.**, vice-chancellor for medical affairs and dean of the School of Medicine.

Andersson comes to St. Louis from Georgetown University School of Medicine where he served as controller. In his new position, Andersson will organize and administer functions associated with the management of financial resources of the School of Medicine. He will be responsible for the central administrative budget, monitoring the financial performance of academic and nonacademic departments and coordinating the preparation and presentation of financial reports for the medical school. In addition, he will represent the school with third-party payors, affiliated teaching hospitals and other organizations contracting for services.

■ **Patricia A. Parson, D.D.S.**, professor and chairman of the Department of Pediatric Dentistry at Washington University School of Dental Medicine in St. Louis has received the 1990 Distinguished Alumnus Award from the University's Dental Alumni Association. The award was presented to Parsons during the association's annual banquet, held September 8 in St. Louis.

Parsons was selected for the honor by an anonymous committee of dental alumni and is the second woman to receive the award.

Parsons joined the dental school faculty in 1960 and has spent her entire teaching career at Washington University. She is on the staffs of Barnes and St. Louis Children's hospitals, both sponsoring institutions of the Washington University Medical Center.

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1. Put your hands over your mouth. Count to 10. Or better yet, 20.
2. Stop in your tracks. Press your lips together and breathe deeply.
3. Phone a friend.
4. Phone the weather.
5. Say the alphabet out loud.
6. If someone can watch the children, go outside and take a leisurely walk.
7. Take a hot bath or splash cold water on your face.
8. Pick up a pencil and write down your thoughts.
9. Close your eyes and imagine you're hearing what your child hears.
10. Turn on the radio or TV.
11. Hug a pillow.
12. Write for prevention information: National Committee for Prevention of Child Abuse, Box 2866, Chicago, IL 60690.

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New Members

■ **Robert J. Bury, M.D.**, 12328 Riggs, Overland Park, KS 66209, has become a member of the Missouri State Medical Association. Dr. Bury obtained his medical degree at the Baylor College of Medicine in 1975. He completed his residency at the Baylor College of Medicine and affiliated hospital, Houston, TX. Dr. Bury specializes in obstetrics and gynecology.

■ **Mitchell B. Cordover, M.D.**, 999 Executive Parkway, St. Louis 63141, has become a member of the Missouri State Medical Association. Dr. Cordover obtained his medical degree at the University of Arizona School of Medicine in 1982. Dr. Cordover specializes in emergency medicine.

■ **T. Gregory Friend, M.D.**, Suite 138, 6400 Prospect, Kansas City 64132; has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Friend received his preliminary education and obtained his medical degree at the University of Missouri-Kansas City in 1985. He completed his residency at Emory University Affiliated Hospital, Atlanta, GA. Dr. Friend specializes in anesthesiology.

■ **Daniel Scagliotti, M.D.**, 24th and Gillham Road, Kansas City 64108, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Scagliotti received his preliminary education at M. Sastre National College-Argentina and obtained his medical degree at the Buenos Aires University School of Medicine in 1971. He completed his residency at the Illinois Masonic Medical Center, Chicago, IL. Dr. Scagliotti specializes in pediatric cardiology.

■ **John P. Tanner, M.D.**, 4400 Broadway, Suite 400, Kansas City 64111, has become a member of the Missouri State Medical Association. Dr. Tanner obtained his medical degree at Northwestern University School of Medicine in 1987. He completed his residency at Emanuel Hospital Health Center, Portland, OR. Dr. Tanner specializes in oral/maxillofacial surgery.

■ **Marc W. Weise, M.D.**, 115 W. Mermod Place, Kirkwood 63122, has become a member of the Missouri State Medical Association. Dr. Weise obtained his medical degree at the University of California, San Diego School of Medicine-La Jolla in 1984. He completed his residency at Deaconess Hospital, Cincinnati, OH. Dr. Weise specializes in orthopedic surgery.

■ Resident Members

John B. Bedotto, M.D. — *cardiovascular diseases*
Mark F. Brinkman, M.D. — *no specialty listed*
Jan M. Bury, M.D. — *no specialty listed*
Christopher P. Graviss, M.D. — *radiology*
Kelly L. Johnson, M.D. — *no specialty listed*
Raymond L. Kacich, M.D. — *cardiovascular diseases*
Charles Lewis, M.D. — *psychiatry*
Mark Rodefeld, M.D. — *general surgery*
James H. Runnels, M.D. — *internal medicine*
Mary E. Schanbacher, M.D. — *diagnostic radiology*
Paul W. Spearman, M.D. — *internal medicine and pediatrics*
Matthias M. Stroemel, D.O. — *internal medicine*
Todd D. Trobough, M.D. — *obstetrics and gynecology*
Elizabeth Wickstrom, M.D. — *obstetrics and gynecology*
Brent M. Wogahn, M.D. — *general surgery*

■ Student Members

University of Missouri-Kansas City

David W. Templeton
Lisa Thakor

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Indications: Yocon® is indicated as a sympathicolytic and mydriatric. It may have activity as an aphrodisiac.

Contraindications: Renal diseases, and patient's sensitive to the drug. In view of the limited and inadequate information at hand, no precise tabulation can be offered of additional contraindications.

Warning: Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

Adverse Reactions: Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral a-adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.^{1,2} Also dizziness, headache, skin flushing reported when used orally.^{1,3}

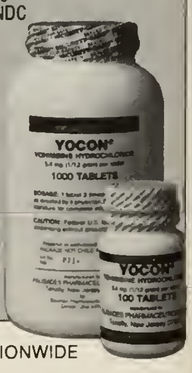
Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.^{1,3,4} 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to ½ tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.^{3}

How Supplied: Oral tablets of Yocon® 1/12 gr. 5.4 mg in bottles of 100's NDC 53159-001-01 and 1000's NDC 53159-001-10.

References:

1. A. Morales et al., New England Journal of Medicine: 1221. November 12, 1981.
2. Goodman, Gilman — The Pharmacological basis of Therapeutics 6th ed., p. 176-188. McMillan December Rev. 1/85.
3. Weekly Urological Clinical letter, 27:2, July 4, 1983.
4. A. Morales et al., The Journal of Urology 128: 45-47, 1982.

Rev. 1/85



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Physician's Recognition Awards

Twenty-two MSMA members qualified for the MSMA-AMA Physician's Recognition Award during August 1990. The award, presented by the Missouri State Medical Association and the American Medical Association, is given to those physicians who voluntarily complete 150 credit hours of continuing medical education within a three-year period. Sixty of the credit hours must be earned in Category 1 programs.

Boone

Charles W. Cheek, *Columbia*
George W.N. Eggers, *Columbia*
William T. Griffin, *Columbia*

Cape Girardeau

David J. Clark, *Cape Girardeau*

Jasper

Lowell K. Pottenger, *Joplin*

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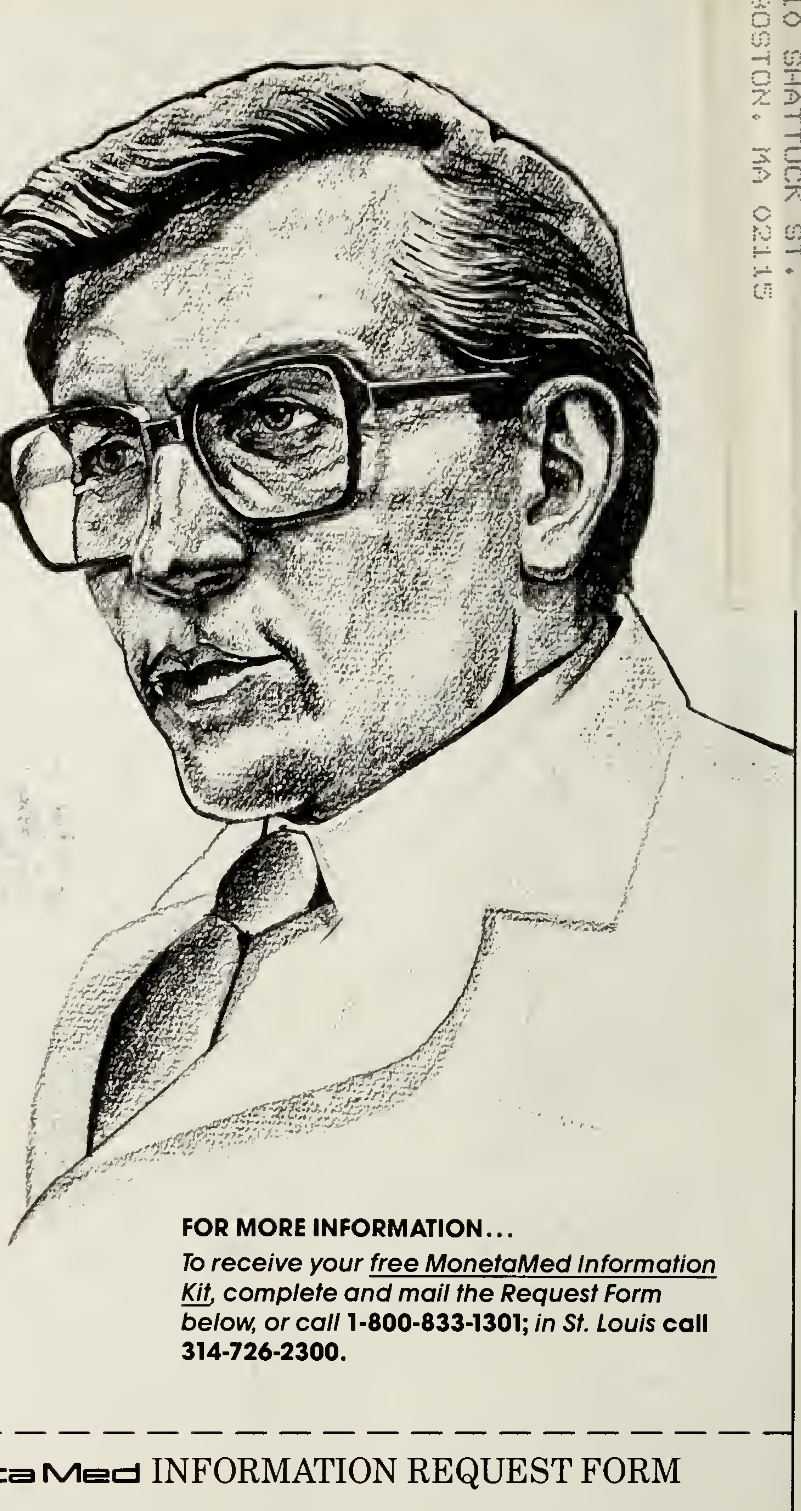

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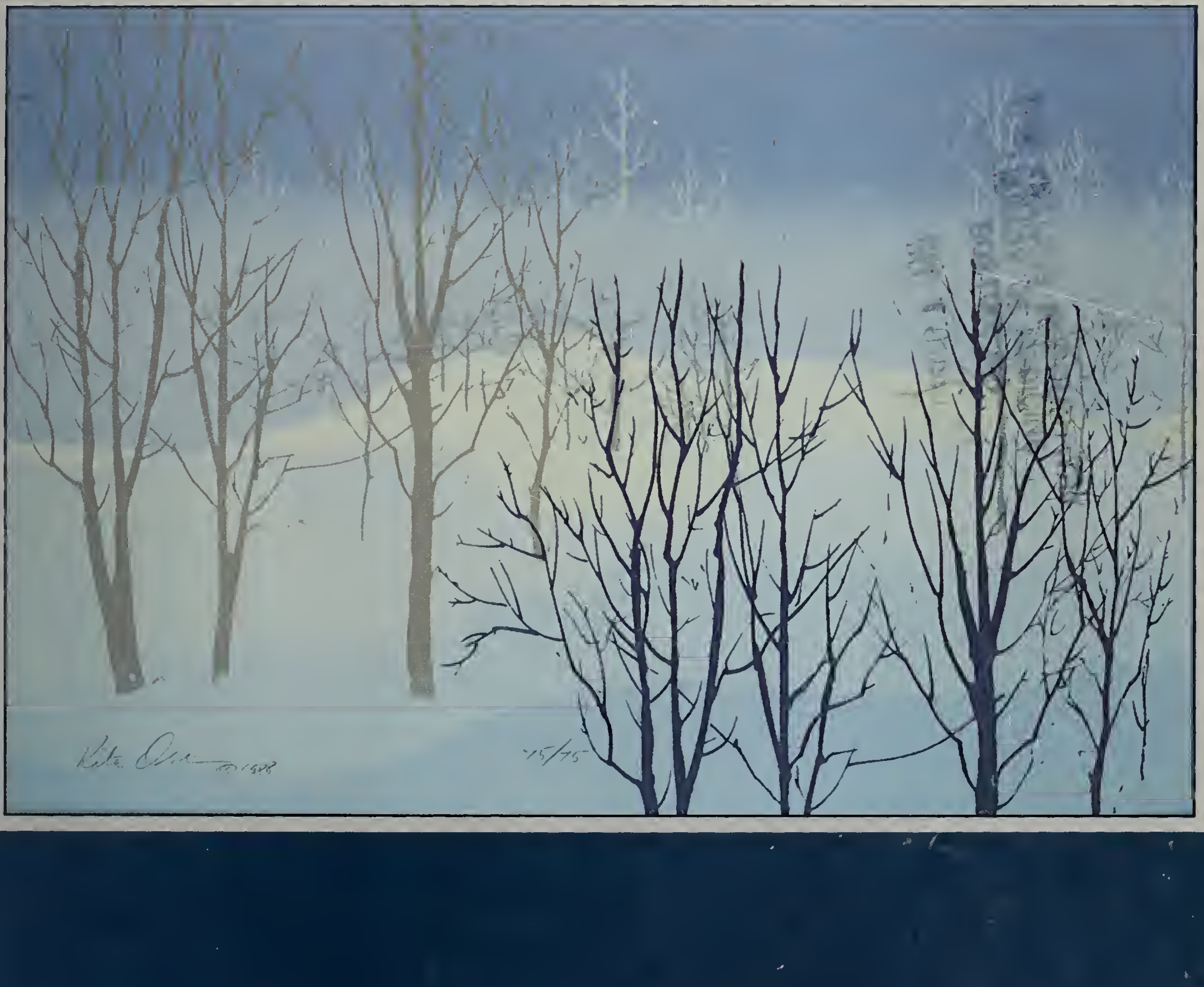

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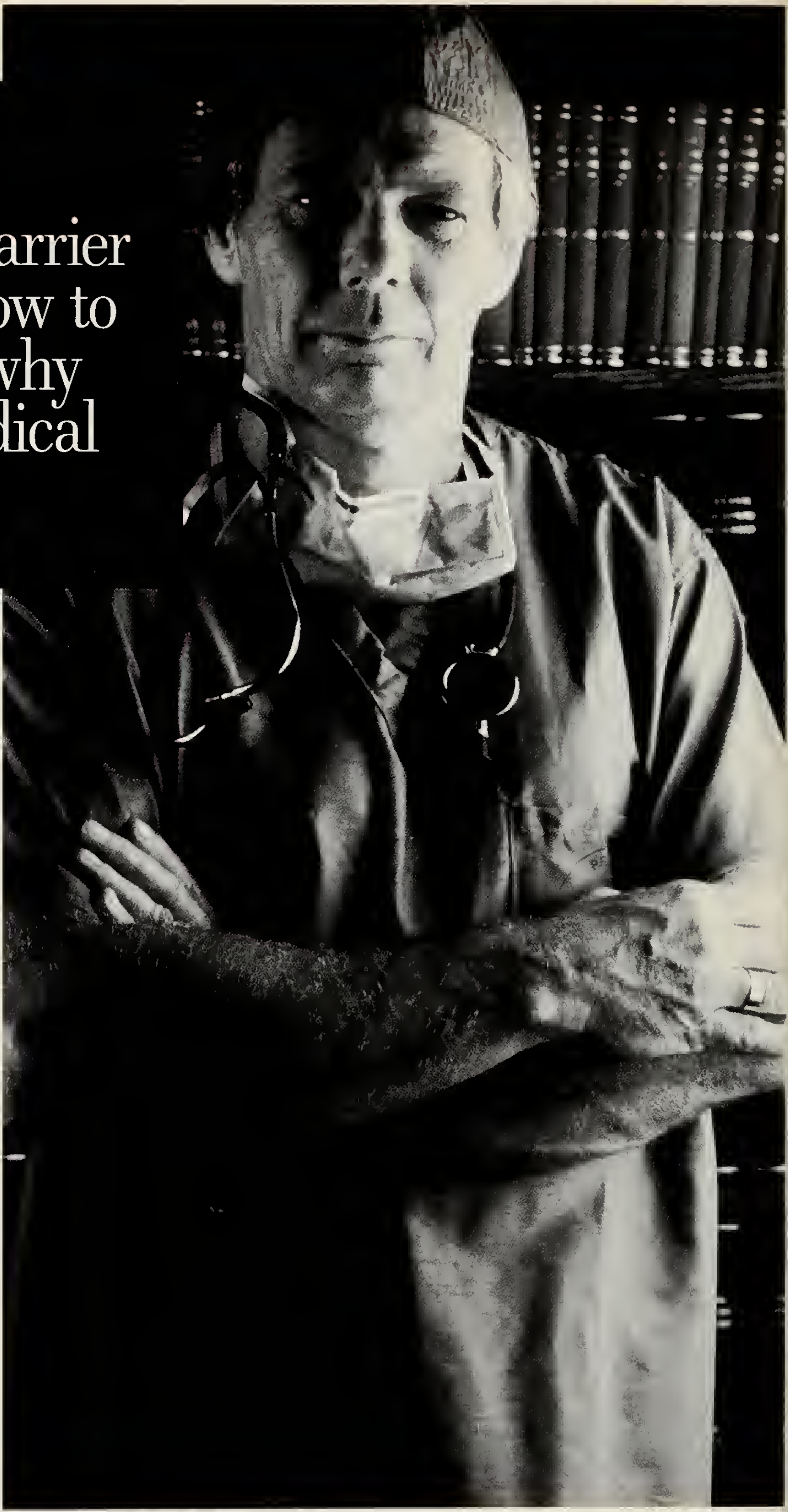

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EDITOR'S DESK

by Donald G. Sessions, M.D.
Editor

Conversations For Action

The linguistic philosopher, J.L. Austin described a class of utterances, which he called performatives, that in themselves constitute acts, such as promising, requesting, and declaring.[1] John Searle, Austin's student, classified all speech acts as embodying one of five fundamental illocutionary points.[2] These include:

Assertives: commit the speaker to something's being the case — to the truth of an expressed proposition.

Directives: attempt to get the hearer to do something. These include both questions and commands.

Commissives: commit the speaker to some future course of action.

Expressives: express a psychological state about a state of affairs. This class includes acts such as apologizing and praising.

Declarations: bring about the correspondence between the propositional content of the speech act and reality.

The German philosopher, Habermas, suggested that "the essential presupposition for success of an illocutionary act consists in the speaker's entering into a specific engagement, so that the hearer can rely on him. An utterance can count as a promise, assertion, request, question, or avowel, if and only if the speaker makes an offer that he is ready to make good insofar as it is accepted by the hearer. The speaker must engage himself, that is, indicate that in certain conditions he will draw certain consequences for action."[3] Habermas indicates that every speech act has consequences for the participants, leading to other immediate actions and to commitments for future action.

Winograd and Flores have described the network of speech acts that constitute what they call conversations for action — those conversations in which an interplay of requests and commissives are directed toward explicit cooperative action. They describe the basic course of such a conversation as a 'dance.' "The initial action is a request from [speaker] A to [hearer] B, which specifies some conditions of satisfaction. Following such a request, there are precisely five alternatives: the hearer can accept the conditions (promising to satisfy them), can reject them, or can ask to negotiate a change in the conditions of satisfaction (counteroffer). The original speaker can also withdraw the request before a response, or can modify its conditions. . . . Each action in turn leads to a different state, with its own space of possibilities. In the normal course of events, [hearer] B at some point asserts to [speaker] A that the conditions of satisfaction have been met. . . . If A declares that he or she is satisfied, the conversation reaches a successful completion."[4]

Performative verbs of conversations for action lend themselves to analysis. A REQUEST has nine basic components:

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■ Editor's Desk

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1. Speaker
2. Hearer
3. Future action desired
4. Conditions of satisfaction
5. Something missing
6. Background of obviousness
7. Pre-supposition of ability
8. Sincerity
9. Time frame

Each and every request includes these components. The speaker making the request to a hearer desires some future action by the hearer to correct a breakdown (something missing). The speaker assumes the the hearer is sincere (that is, his or her private and public stances are coherent) and is able to grant the request in a specific time frame. This occurs in an assumed background of obviousness, that is, in an appropriate contextual setting. Each request has conditions of satisfaction that, if met, will allow both the speaker and the hearer to know that the request has been fulfilled and the conversation has been successfully completed.[5]

Similarly, analysis of the commissive verb PROMISE shows the following components:

1. Speaker
2. Hearer
3. Future action declared
4. Conditions of satisfaction
5. Recognition of the speaker's breakdown
6. Background of obviousness
7. Pre-supposition of ability
8. Competency and sincerity
9. Time frame.

Each and every promise includes these components. The person making the promise (speaker) recognizes what is missing for the person making the request (hearer) and declares that certain action will occur in the future and within a specific time frame. There is an assumption that the promised action will occur in a standard practice and that the standard practice has a history that lives in fulfillment. In making the promise the speaker implies competency (the ability to produce the action) and sincerity (that is, the speaker's public and private conversations are the same). The mutual conditions of satisfaction are such that when they are met, both the promise has been fulfilled.[6] To the extent that the requester and the promiser can coordinate action their conversation can be successfully completed.

The medical conversation between patients and doctors can be seen as a "dance" of requests and promises. The patient (speaker) makes a request to the doctor (hearer) regarding future action desired about a breakdown in the domain of health. The patient arrives with pre-suppositions that the doctor has the ability to produce desired action, is sincere about the action, and can produce it within a certain time frame. When the patient's (and the doctor's) conditions of satisfaction have been attained then the medical conversation is successfully completed.

Similarly, the doctor listens to the patient's request concerning a breakdown in the domain of health and recognizes the patient's conditions of satisfaction. If the doctor feels that he or she has the ability to produce action in the future to correct the breakdown then he or she can so declare by promising to do it within a specific time frame. This occurs in a background of obviousness in which the doctor's sincerity, competency, and ability to produce the action is implicit. Both doctor and patient have their own specific conditions of satisfaction. As above, when both the patient's and the doctor's conditions of satisfaction are attained, the medical conversation is successfully completed. This successful coordination of action created a trusting relationship between the patient and the doctor.

The implications of this are interesting. If there is a breakdown in any of the components then the conversation becomes confusing and this may lead to an unsuccessful encounter. This is obvious, if for instance the patient does not feel that the doctor is sincere. This results in a lack of trust and a breakdown in the relationship.

Utilizing the components of the performatives can be valuable in assessing what is occurring when there is an obvious breakdown in the medical conversation. When the interaction is not working, it is useful to ask yourself these questions: What is going on here? What is the request here? What is the request under the request? What is the breakdown that results from the verbalized breakdown? What are the conditions of satisfaction?

Hidden conditions of satisfaction can be a major source of difficulty. Patients may not be certain what conditions will fulfill their expectations. Doctors may misinterpret patient's conditions of fulfillment, confuse them with his or her own, or not be able to produce correcting action in that domain. It is not surprising when tensions develop here.

Powerful determinants of the ability to coordinate action between doctors and patients include the clarity of the patient's request and the ability of the doctor both to listen to the request and to recognize the patient's conditions of satisfaction. Successful coordination of action

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Letters To The Editor

Wear Your Wishes Tag

Dear Dr. Sessions:

I enjoyed your editorial on procrastination titled, "So Much For The Living Will."

As your wife has no doubt told you, there are as many versions of "Living Will" forms as there are women's shoes. And there will no doubt be additional versions developed during the upcoming Missouri legislative session. The cost of the different forms varies a great deal as well as the vigor with which they are promoted, namely from nothing to a lawyers fee for completion.

The main problem with most is that they will be completed including witnesses and/or notarization, and then placed in a file or several files, none of which are available when needed. I heard anecdotally of a patient who had a living will, had been admitted for minor surgery and had a "No Code" on his chart. The "No Code" was missed by a nurse on report. When she passed his room and saw him blue, she grabbed the defibrillator in the hall and successfully restored a regular rhythm. The real trouble began when three days later, he had a stroke and is now a bed-confined hemiplegic who lies there and curses his fate during all of his waking hours.

This led to my conception of a "Wear Your Wishes" tag that can be worn on a neck chain. I have worn mine constantly since May. On my chest it will always be evident to any auscultation of the heart. It says "Do Not Resuscitate, Intubate, or Defibrillate" on one side, and "Let Me Die in Peace or I Will Sue" on the other. My daughter suggested, "I Have A Living Will" for the first side. However, the first lot has been made, and I sent tags to every state legislator in May. Although they have no legal standing at present, it seems to me that purchase and constant wear would be "clear and convincing" evidence, as the Supreme Court demands.

Anything this simple will never be accepted by the lawyers as legal, but it would sure call attention to your wishes.

Berry Ivy, M.D.
Springfield

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Dr. Holwick outside of hospital where she practices as a civilian traumatologist.

Dr. Holwick in operating room at Letterman Army Medical Center.

JANN L. HOLWICK, M.D.

General and Trauma Surgeon.
Captain, U.S. Army Reserve.

EDUCATION University of Southern California, B.S.; University of California School of Medicine.

RESIDENCY Harbor General Hospital—UCLA Medical Center.

HOSPITAL AFFILIATIONS St. Luke Hospital; Huntington Memorial Hospital, Pasadena, California; Traumatologist, Arcadia Methodist Hospital, Arcadia, California.

OUTSTANDING ACHIEVEMENTS Borden Freshman Prize; Alpha Lambda Delta; Phi Beta Kappa; Phi Kappa Phi; Bovard Award; ALD Award; American Institute of Chemists Medal Award; Summa Cum Laude, University of California; Alpha Omega Alpha.

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- Positive direct Coombs' tests have been reported during treatment with cephalosporins.
- Ceclor should be administered with caution in the presence of markedly impaired renal function. Although dosage adjustments in moderate to severe renal impairment are usually not required, careful clinical observation and laboratory studies should be made.
- Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.
- Safety and effectiveness have not been determined in pregnancy, lactation, and infants less than one month old. Ceclor penetrates mother's milk. Exercise caution in prescribing for these patients.

Adverse Reactions: (percentage of patients)

Therapy-related adverse reactions are uncommon. Those reported include:
- Hypersensitivity reactions have been reported in about 1.5% of patients and include morbilliform eruptions (1 in 100). Pruritus, urticaria, and positive Coombs' tests each occur in less than 1 in 200 patients. Cases of **serum-sickness-like** reactions have been reported with the use of Ceclor. These are characterized by findings of erythema multiforme, rashes, and other skin manifestations accompanied by arthritis/arthralgia, with or without fever, and differ from classic serum sickness in that there is infrequently associated lymphadenopathy and proteinuria, no circulating immune complexes, and no evidence to date of sequelae of the reaction. While further investigation is ongoing, **serum-sickness-like** reactions appear to be due to hypersensitivity and more often occur during or following a second (or subsequent) course of therapy with Ceclor. Such reactions have been reported more frequently in children than in adults with an overall occurrence ranging from 1 in 200 (0.5%) in one focused trial to 2 in 8,346 (0.024%) in overall clinical trials (with an incidence in children in clinical trials of 0.055%) to 1 in 38,000 (0.003%) in spontaneous event reports. Signs and symptoms usually occur a few days after initiation of therapy and subside within a few days after cessation of therapy; occasionally these reactions have resulted in hospitalization, usually of short duration (median hospitalization = two to three days, based on postmarketing surveillance studies). In those requiring hospitalization, the symptoms have ranged from mild to severe at the time of admission with more of the severe reactions occurring in children. Antihistamines and glucocorticoids appear to enhance resolution of the signs and symptoms. No serious sequelae have been reported.
- Stevens-Johnson syndrome, toxic epidermal necrolysis, and anaphylaxis have been reported rarely. Anaphylaxis may be more common in patients with a history of penicillin allergy.
- Gastrointestinal (mostly diarrhea): 2.5%
- Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment.
- As with some penicillins and some other cephalosporins, transient hepatitis and cholestatic jaundice have been reported rarely.
- Rarely, reversible hyperactivity, nervousness, insomnia, confusion, hypertonia, dizziness, and somnolence have been reported.
- Other: eosinophilia, 2%; genital pruritus or vaginitis, less than 1% and, rarely, thrombocytopenia and reversible interstitial nephritis.

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PRESIDENT'S PAGE

by Gary A. Dyer, M.D.
MSMA President

Charity comes from the heart. Charity care comes from the heart through the hands of giving physicians.

PHYSICIANS
CHARITY
CARE
PROGRAM
50+

Charity Comes From the Heart

The MSMA Physician's Charity Care Program will officially be a year old on December 31st of this year. Each Missouri physician has been, and continues to be asked to participate in the program by giving 50 or more hours of uncompensated hands-on medical care to indigent or Medicaid patients. Additionally, he or she is asked to keep a simple record of the hours in a timely fashion. For 1990, tabulated hours should be turned in to MSMA in early January of 1991.

Many Missouri physicians give more than 50 hours per year of uncompensated medical care to needy patients, but, unfortunately, some give none. If each of the approximately 10,000 Missouri physicians gave only 50 hours per year, the total hours would be 500,000. That gift could translate into any of the following: two million 15-minute office visits; four million 7.5-minute follow-up visits; 100,000 five-hour surgeries; or 500,000 one-hour psychiatric encounters. At $250 per hour (the hourly charge of many good law firms in Missouri) the gift by Missouri physicians would equal $125,000,000. If the care could be clearly delivered to the truly needy, the impact of physician charity care in Missouri would be, in the words of my 9-year-old son, "AWESOME!"

The original charity care resolution was passed unanimously by the MSMA House of Delegates (A89), and the Council later that year voted to implement the resolution beginning in 1990. Twenty-five physicians recorded charity care hours in 1989 and turned in numbers to MSMA. Those physicians have been recognized in *Missouri Medicine.*

The MSMA charity care resolution was taken to AMA (A89) as Resolution 44. The AMA House of Delegates voted to refer the resolution to the AMA Board of Trustees. The AMA Board of Trustees in Report DD (I89) strongly agreed with the spirit of the resolution, and through various AMA channels will intensify efforts to encourage U.S. physicians to give charity care. This effort is to be applauded.

The AMA, however, prefers to continue relying on survey data rather than actual recorded data kept by physicians. The AMA claims the average U.S. physician gives 3 hours per week of "free" care and 3.6 hours per week of "reduced fee" care. The problems here are several. Is a survey as reliable as tabulated data? What portion of the "free" care is actually rendered to truly needy recipients on a prospective basis (charity care) and what portion is actually bad debt? How much of the care is hands-on care? My suspicion is that when allowances are made for bad debt, professional courtesy, non-hands-on care, care rendered to those not truly needy and the inflation factor of responding to a survey, the AMA's claim of three hours per week would be considerably reduced.

The MSMA Charity Care Program is simple in concept, easy to administer, and goes to the heart of the problem. It does not discourage "free" care or "reduced fee" care to others, but targets, as an association program, those that are truly needy. It relies on the integrity and documentation of each physician, and allows all physicians to participate in their individual practice settings. Fifty hours per year should "let everybody in."

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President's Page

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Those who can give more hours are encouraged to do so.

If joined by many Missouri physicians, the MSMA Physician's Charity Care Program will do a great deal of good for truly needy patients and a great deal of good for the hearts of giving physicians. Charity comes from the heart. Charity care comes from the heart through the hands of the giving physician. Please tabulate your hours for 1990 and turn them in to MSMA on the MSMA Physician's Charity Care Report form located on page 869 of this issue.

Editor's Desk

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occurs when the doctor is able and willing to make a promise specifically regarding the request and keep the promise. In the dance, of course, the doctor also makes requests of the patient and expects the patient to make promises in kind. When this happens, mutual trust develops and the coordination of action is successful. When promises are neither made nor kept, the opposite is true.

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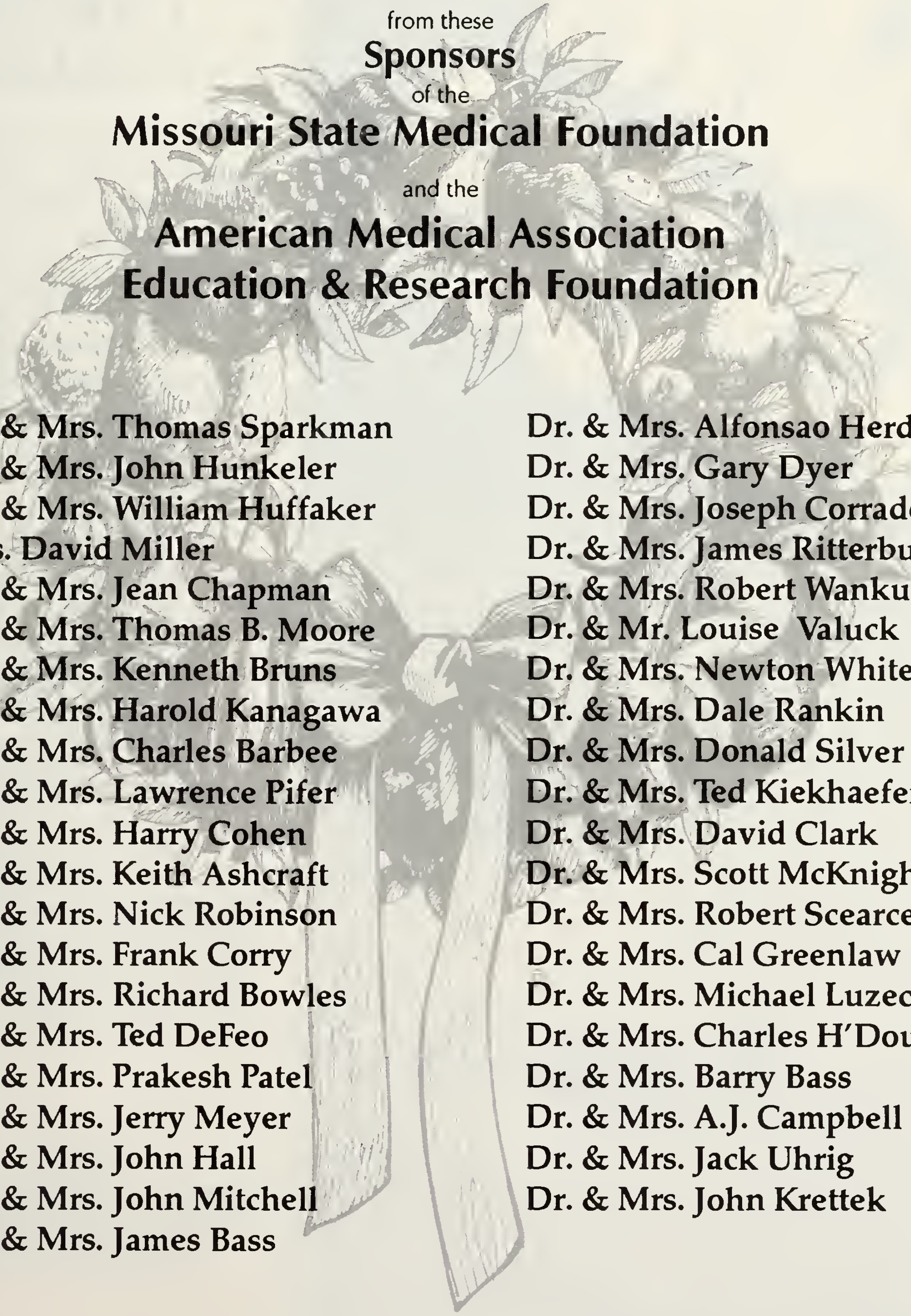

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PRACTICE MANAGEMENT

by Janice K. Woerth, Ph.D.

Do you have a question for Dr. Woerth? Include your questions along with your name, address and phone number and send them to:

Janice K. Woerth, Ph.D.
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Although your name will not be used in the journal, please include your name and phone number so that Dr. Woerth may contact you if she needs additional information to answer your question.

Dear Dr. Woerth:

As a family practitioner, I frequently do the preoperative examination for surgery patients. It seems that many of these claims are denied. Is there anything I can do to get my services paid by the insurance company?

Dr. J.S.

Dear Dr. J.S.:

I often hear this complaint by family practitioners and there is something that you can do. There is a CPT modifier, -56, that indicated that the services rendered are for preoperative management only. You should use this modifier when you are billing for a preoperative history and physical examination or for initial hospital care prior to surgery. In addition, it is equally important that the surgeon use modifier -54 on his/her claims to indicate that he/she has done the surgery only and is not billing for the preoperative management. Whoever performs the postoperative management needs to use modifier -55 to indicate that he/she has performed the postoperative management. If the surgeon performs the surgery and the postoperative management he/she uses both modifier -54 and -55 on the code for the surgery.

Dear Dr. Woerth:

Would you explain the difference between a non-covered service and a service that is medically unnecessary?

Dr. H.K.O.

Dear Dr. H.K.O.:

A non-covered service is a service that is not covered by the patient's insurance policy. This is because the patient did not choose to purchase the coverage or coverage for the service was not available to the patient to purchase. For example, Medicare has quite a few non-covered services. These include routine physical examinations and tests, i.e., most preventive medicine, cosmetic surgery, and most immunizations. Labeling these services as non-covered does not mean the patient cannot have these services or that you, the physician, cannot charge for these services. It means that if the patient chooses to have the service rendered, he/she pays you directly for the service. Of course, there is always the option of the patient purchasing the coverage from an insurance company other than Medicare. In fact, 70% of all Medicare patients have some type of supplemental insurance coverage.

Medically unnecessary has a much broader definition. For Medicare, medically unnecessary services are those services a) considered as experimental or investigational, b) rendered that are not appropriate for the treatment of the patient's diagnosis, c) furnished primarily for the convenience of the patient, and d) rendered at a level above what is needed to safely and effectively treat the patient. If you believe that a Medicaid service will be deemed as "medically unnecessary" then it is prudent to have the patient complete a Medicare Limitation of Liability form. Just remember, this form can only be used in those cases where you have reason to believe the services will be deemed medically unnecessary.

Medicare informs participating physicians via the Explanation of Medicare Benefits when the services he/she has rendered are medically unnecessary. Non-participating physicians are informed via letter from Medicare. Medicare also sends out newsletters that update physicians as to which services are deemed medically unnecessary. I advise each medical office to keep a list of services deemed by Medicare as medically unneces-

continued on page 874

continued from page 873

sary. Before these services are rendered, have the patient sign the Medicare Limitation of Liability form so that the patient assumes responsibility for payment of the service(s). If a Medicare patient fails to sign the form and the service(s) rendered is deemed medically unnecessary, the physician cannot bill the patient and thus absorbs the cost of the service. Medicare makes exceptions in emergency situations and when the physician had no way of knowing that the service would be deemed medically unnecessary. ■

Call For Resolutions

The 133rd Annual Convention of the Missouri State Medical Association will be held April 3-7, 1991, Crown Center, Kansas City.

Resolutions to be introduced at the 1991 House of Delegates must be submitted to MSMA Headquarters by **February 18, 1991**, to be published in the Delegate's Handbooks.

Resolutions not submitted before the deadline must be introduced under the procedure outlined in the MSMA Bylaws, Chapter III, Sect. I. Prompt submission of resolutions assures their inclusion in the Handbook and allows for their full consideration.

If you have questions regarding resolution submission, contact Jo-Ellyn M. Ryall, M.D., Speaker, MSMA House of Delegates; James Wolfe, M.D., Vice Speaker; or MSMA Headquarters.

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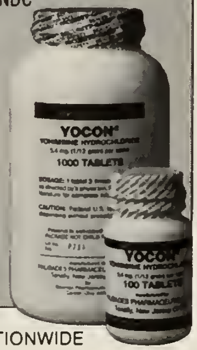

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For Your Information:

Alcohol Consumption and Hangover

Although many of us don't like to admit it, most of us have experienced the unmistakeable feeling of "the morning after." Dry mouth, nausea, dizziness, and headache are just a few of the consequences of overindulgence. Medically, this is known as acute alcohol withdrawal, but to us it's just a hangover.

Most physicians agree that moderate drinking of beer, wine, or cocktails is not generally harmful in itself, but that it can evolve into excessive, damaging consumption. Despite popular belief to the contrary, binge drinking *is* a form of alcoholism. Learning about the mechanism of acute alcohol ingestion can help individuals drink more responsibly, and avoid not only hangovers, but also the serious social and emotional consequences of binge drinking.

Causes of hangover

Alcohol is metabolized in the liver by an enzyme called *alcohol dehydrogenase.* The by-products of alcohol breakdown, as well as the added colorings and flavors in alcoholic drinks (called *congeners*), give a drinking bout its "hangover potential." Brandy, bourbon, and red wines have the most congeners and cause the worst hangovers. Gin and vodka, on the other hand, have few congeners, and are less likely to cause a hangover.

All of these breakdown products stimulate release of substances called *catecholamines,* that cause the sweating, flushing, headache, and nausea following a drinking spree. In addition, large amounts of alcohol irritate the lining of the stomach, causing an acute gastritis. Alcohol also shuts off production of *anti-diuretic hormone* in the body, causing excessive urination that leads to dehydration. Studies show that smoking before and after a binge can increase the severity of the hangover.

Facts and fables about alcohol

- **"It's harder on you if you switch drinks."** Although studies show no additional damage to the body by mixing the types of alcoholic beverages consumed, it *does* seem to be true that a variety of drinks will increase the likelihood of hangover.
- **"If you eat antacids you won't get drunk as fast."** Exotic "tricks" designed to "coat the stomach" aren't any more effective in slowing the effects of alcohol than just eating an ordinary meal. *Any* food in the stomach slows alcohol absorption, so just eat something you enjoy.
- **"Drinking black coffee sobers you up."** The stimulant effect of coffee

only makes you a wide-awake drunk. However, drinking *any* liquids helps prevent dehydration.

- **"The 'hair of the dog that bit you' is a sure cure for a hangover."** Although the additional liquid in an alcoholic beverage may help lessen dehydration, the additional alcohol merely postpones the effects of acute alcohol withdrawal. This "cure" is a somewhat dangerous one, as it can lead to more continuous drinking and chronic alcoholism. The only sure-fire relief from hangover is to drink plenty of fluids (to insure adequate re-hydration), acetaminophen for headache (aspirin can aggravate the already irritated stomach lining), and, of course, time.
- **"A good stiff drink is the best medicine when you're chilled."** The deer hunter with the hip flask of blackberry brandy may feel a warm face and hands following a swig, but the warmth is a result of blood flow being diverted from the internal organs to the body surface, which actually increases overall body chilling.

Responsible drinking tips

Drinking alcohol to excess is *never* a good idea, but for those who want to enjoy their favorite alcoholic beverages in moderation, some simple strategies can help prevent "the morning after."

1. **Know how much is *too* much.** Remember, larger people can tolerate more alcohol than smaller people, and different individuals exhibit different rates of alcohol breakdown. Women tend to break alcohol down more slowly than men, independent of size differences. Nevertheless, the basic guideline of "one 12 oz. beer = one 6-8 oz. glass of wine = one 1 oz. shot of whiskey" still applies. Drinking as few as two drinks in an hour can raise blood alcohol content to legal limits in some individuals in certain circumstances.
2. **Slow down.** Food slows alcohol absorption. Drink slowly — sip, don't gulp drinks. Wait to be asked for a refill.
3. **Set a limit and stick to it.** Learn to say "No thanks." After reaching your limit, switch to the mixer or to juice only — a full glass keeps hosts and friends from getting you a refill.
4. **Dilute your drinks.** Instead of enjoying drinks "neat" or "on the rocks," add tonic water, soft drinks, or soda water in a large, tall glass. Larger, more dilute drinks take longer to finish, and help you stick to your pre-defined limit.
5. **Confine your drinking to social gatherings.** People tend to drink larger quantities of alcohol when at home or alone.
6. **Don't drink when you're angry, tired, depressed, or frustrated. Don't automatically pour a drink to "unwind" upon arriving home.** "Reactive" drinking has a high potential for developing into alcoholism. Many former heavy drinkers have found that a cup of coffee or a soft drink satisfies just as well as alcohol, especially when combined with a comfortable chair, a hot shower, a change of clothes, or a favorite book, cassette, or TV program.

The only sure cure for acute intoxication and hangover is to not become intoxicated in the first place. Individuals who choose to drink should follow responsible drinking habits and avoid drinking to excess. ■

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SPECIAL SERIES: Chronic Disease Reports

The Health and Economic Costs of Smoking in Missouri

James R. Davis, M.S., Monica Eischen,
and **Ross C. Brownson, Ph.D.**
Columbia, Missouri

The authors describe the costs of smoking in Missouri and discuss the implications of smoking trends in the state for the future.

Smoking has been identified as the single leading cause of death in the United States.[1] Studies have shown that more than 390,000 deaths result from cigarette smoking each year in this country.[2]

National statistics show that more than 20% of heart disease, 30% of cancer, and 80% of chronic obstructive lung disease can be attributed to cigarette smoking.[2] Cigarette smoking also plays a significant role in other forms of cancer, burn deaths, low birth weight, and other childhood conditions.[2] The economic costs of smoking are also substantial. These costs include direct health care expenditures, indirect morbidity costs, and indirect mortality costs.

Smoking rates have declined during the past 25 years, but more than one quarter of the U.S. population continues to smoke and expose themselves to the serious health risks associated with tobacco use.[2] The U.S. Census Bureau's 1989 Current Population Survey found a smoking rate in Missouri of 30.4%, with the estimated total number of smokers equal to 1,123,768. The estimated smoking rates in Missouri by gender were 32.8% for males and 28.2% for females.[3]

Nearly every health professional in Missouri has heard these or similar statements, but some may not realize the truly staggering toll that cigarette smoking takes on life and economic well-being in the state. This article estimates the costs of smoking in Missouri and discusses the implications of smoking trends on future costs.

Methods

Smoking costs in Missouri were calculated using a software program developed by the Centers for Disease Control and the Minnesota Department of Health. This software program, known as SAMMEC II (Smoking Attributable Morbidity, Mortality, and Economic Costs) calculates the number of smoking attributable deaths in Missouri for 22 diseases among adults age 35 and older, four perinatal conditions, and burn deaths among all ages.[4] These diseases and age groups have been selected for inclusion in SAMMEC II based on results from the American Cancer Society's Cancer Prevention Study II.[2]

The program also estimates the direct health care costs (i.e., hospitalization, physician fees, nursing home, medications, and other professional costs), indirect morbidity costs (i.e., productivity losses due to dis-

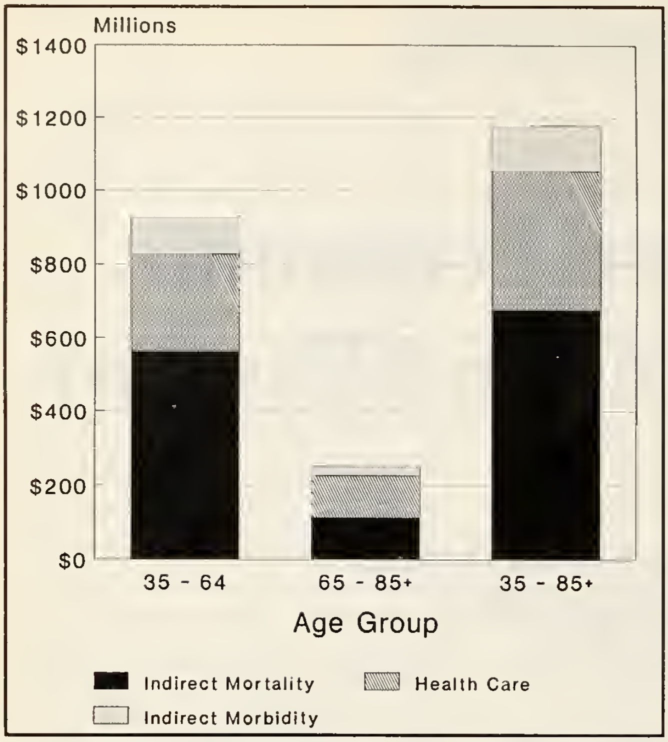


Fig. 1. Indirect Mortality Cost, Health Care Cost, And Indirect Morbidity Cost Attributable to Smoking In Missouri, 1989.

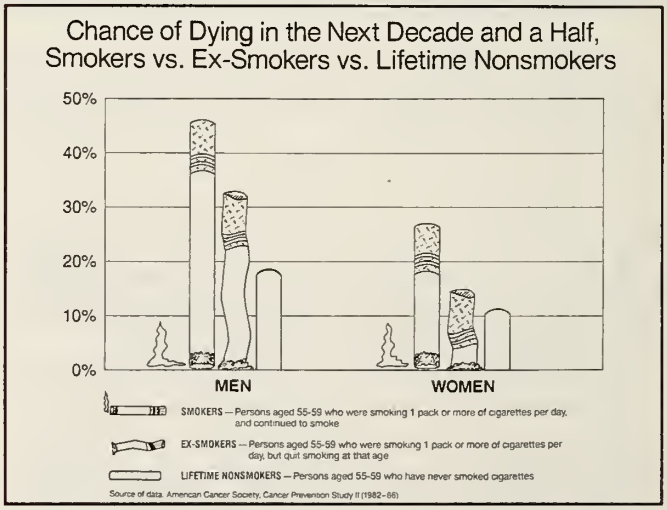
ability days), indirect mortality costs (i.e., productivity losses due to premature mortality), and total economic costs associated with smoking in Missouri.

SAMMEC II program calculations use current smoking and disease relative risks derived from the American Cancer Society's Prevention Study II.[2] The program also requires population data, mortality data, smoking prevalence data, and health care cost data for Missouri. We used 1989 Missouri population projections and 1989 Missouri mortality statistics provided by the Missouri Department of Health, State Center for Health Statistics. Missouri 1989 smoking prevalence rates were obtained from the U.S. Census Bureau's 1989 Current Population Survey.[3] Missouri health care costs for 1989 were not available. This program parameter was conservatively estimated by using available 1987 health care cost data provided by the Centers for Disease Control.

A second component of this article assesses the potential long term impact of smoking in the state by examining smoking quit ratios among Missouri residents. The smoking quit ratio is defined as the percentage of individuals in a survey sample that have smoked in the past, but are no longer smoking. The information presented on Missouri smoking quit ratios has been derived from the U.S. Census Bureau's 1989 Current Population Survey tapes and was provided by the Office on Smoking and Health, Centers for Disease Control.[3]

Table 1
Smoking Attributable 1989 Mortality in Missouri by Diagnosis and Gender

Diagnosis	Male	Female	Total
Cancer	2521	1001	3522
Cardiovascular Disease	3009	1421	4430
Respiratory Disease	1331	791	2122
Perinatal Conditions	41	27	68
Burns	42	22	64
Total	6944	3262	10,206


Chance of Dying in the Next Decade and a Half, Smokers vs. Ex-Smokers vs. Lifetime Nonsmokers

Source of data. American Cancer Society, Cancer Prevention Study II (1982–86)

Fig. 2. Chance of Dying In the Next Decade and A Half, Smokers vs. Ex-Smokers vs. Lifetime Non-Smokers.

Results

Table 1 shows the smoking attributable mortality in Missouri during 1989 by major disease groupings. An estimated 10,206 Missourians died from smoking-related causes in 1989. The age adjusted Missouri smoking attributable mortality rate in 1989 was 287.8 per 100,000 persons age 35 and older.

Table 2
Smoking Quit Ratios* for Missouri by Year, Age Group, and Gender

	1985			1989		
Age Group	Male	Female	Total	Male	Female	Total
20-44	37.7	35.7	36.8	32.1	30.4	31.3
45-64	53.5	40.6	48.6	59.9	49.6	55.1
65+	72.2	58.1	66.2	69.8	71.1	70.3
ALL AGES	48.4	40.6	45.1	47.4	41.7	44.8

**percent of eversmokers that are currently not smoking*

Cardiovascular diseases accounted for an estimated 4,430 deaths or 43% of the smoking attributable deaths. Smoking attributable ischemic heart disease alone accounted for 2,624 deaths in 1989. Cancer was the second leading cause of smoking attributable mortality with 3,522 deaths overall and 2,869 deaths due specifically to lung cancer. Respiratory diseases comprised the bulk of the remaining smoking attributable deaths with 2,122 deaths overall and 1,347 deaths from chronic obstructive pulmonary disease.

The mortality cost of smoking in Missouri during 1989 was borne disproportionately by males. The smoking attributable mortality rate for males age 35 and older was 584.5 per 100,000 persons, with an estimated 6,944 deaths. The smoking attributable mortality rate for females in the same age group was less than one half of that for males, at 223.2 per 100,000 persons.

Figure 1 presents the estimated economic costs associated with smoking in Missouri. The overall cost attributed to smoking during 1989 was $1,178,861,210. This translates to $483 per person age 35 or older and approximately $229 per person for the entire state of Missouri. These per person costs apply to non-smokers as well as smokers. The total estimated economic costs attributable to smoking in Missouri during 1989 included $676,584,029 for indirect mortality cost, $377,539,234 for direct health care cost, and $124,737,947 for indirect morbidity cost. Indirect mortality cost comprised more than one half of the total economic cost. The bulk of the costs in each category occurred in the 35-64 age group. More than 71% of the total economic cost was associated with smoking attributable conditions among males.

Current Population Survey[3] data showed an overall Missouri smoking quit ratio of 44.8% in 1989 (Table 2). The overall smoking quit ratio in Missouri declined during the four-year period from 1985 to 1989. This was in contrast to national trends that showed an increase in the overall quit ratio from 45.0% in 1985 to 47.8% in 1989. Connecticut and Delaware were the only two states that showed a greater decline in the smoking quit ration from 1985 to 1989.

The decline in the overall Missouri smoking quit ratio was due primarily to a steep decline in the 20-44 age group. The decline in this age group occurred among both males and females. The other two groups showed substantial increases in quit ratios from 1985 to 1989.

Discussion

SAMMEC II calculations reveal the substantial impact that smoking has on health in Missouri. More than three quarters of the 1989 smoking attributable deaths in Missouri were due to cardiovascular disease (CVD) and cancer. CVD and cancer are the two leading causes of death in the state. Nearly one out of five CVD deaths and one out of three cancer deaths were attributable to cigarette smoking.

Several recent studies have documented the benefits that can be achieved through smoking cessation. Data from the American Cancer Society showed that men age 55-59 who quit smoking reduce their chances of dying in the next 15 years by approximately 28% (Fig 2). Women in the same age group can reduce their chances of dying by 32%.[5] Two studies by Rosenberg found that the risk of heart attack among individuals who quit smoking was reduced to that of non-smokers within four years after quitting.[6,7] Several studies also showed that the risk of dying from lung cancer was reduced by 80% to 90% after abstinence for 15 years or more.[5]

The economic impact of smoking in Missouri may be even more surprising than the health burden. SAMMEC II calculations show a staggering total of nearly $1.2 billion in smoking-associated costs for the state of Missouri. This translates into nearly $1000 per year for a family of four. The cost of smoking is a serious burden for Missourians to bear. It impacts individual consumers through higher health insurance premiums and increased prices in the market place.

Given these mortality and economic costs, the steep decline in the Missouri smoking quit ratio for the 20-44 age group is particularly disturbing. This may be a short term trend or it may represent a continuing problem for the state.

A previous study by the Department of Health showed unusually high smoking rates among youth in Missouri.[8] The study found weekly smoking rates of approximately 30% among twelfth graders compared to an overall adult smoking rate in Missouri of 26%. The study also found that 72% of Missouri twelfth graders had used tobacco products compared to a national survey that found 66% of twelfth graders had ever used tobacco.[9] If these young smokers continue smoking after they enter the 20-44 age group, the Missouri smoking quit ratio may decrease even further.

Conclusion

The health and economic burden associated with cigarette smoking in Missouri is enormous. Health professionals and policy makers at all levels should enhance public awareness of cigarette smoking costs and support increased resources for smoking prevention and cessation programs. If the current trends in smoking among youth and young adults are not reversed, Missouri will continue to pay smoking attributaable costs while many other states move on to a healthier future.

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The Authors

JAMES R. DAVIS, M.S.
MONICA H. EISCHEN
ROSS C. BROWNSON, Ph.D.

Mr. Davis and Ms. Eischen are affiliated with the Bureau of Smoking, Tobacco, and Cancer, Missouri Department of Health, Columbia, Missouri. Dr. Brownson is the director of the Division of Chronic Disease Prevention and Health Promotion, Missouri Department of Health, Columbia, Missouri.

Acknowledgements

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Reprints

James R. Davis, M.S.
Bureau of Smoking, Tobacco, and Cancer
Missouri Department of Health
201 Business Loop 70 West
Columbia, MO 65203

Vibrio Infections in Kansas City

Gerald Hoff, Ph.D., Dale H. Giedinghagen, B.A.,
and **Michelle C. Thomas, M.S.**
Kansas City, Missouri

In August 1989, the Kansas City Health Department declared vibrio infections a reportable disease. The authors present a report discussing cases of vibriosis reported between 1980 and 1989.

The bacterial genus, *Vibrio*, contains an expanding list of organisms,[1] many of which are important causes of human morbidity and mortality. Most renowned is *V. cholerae* 01, the etiologic agent of cholera. In 1988, there were 48,403 cases of that pandemic disease reported from 35 countries.[2] An endemic focus of cholera has been identified along the Gulf Coast of the United States, and infections in other states have resulted from the interstate transport of contaminated shellfish.[3-5]

In North America, species other than *V. cholerae* 01 are more significant causes of morbidity and mortality. Morbidity ranges from asymptomatic infection to severe cases, in which patients undergo amputation of infected limbs.[6-8] Mortality is not uncommon, particularly among persons with underlying medical conditions, such as cirrhosis and diabetes.[9,10] The highly motile, free-living, gram negative *Vibrio* spp. live in marine and brackish water environments.[11] Human infections result primarily from ingesting infected shellfish, crustaceans and fish,[12,13] from receiving injuries from marine animals,[8,14-16] and from exposure to marine and brackish fresh water.[17-19] These cases are usually isolated incidents, although on occasion, a major common-source outbreak occurs due to contaminated seafood.[12]

Most infections in North America have been reported from the Gulf Coast and Atlantic Coast.[6,7,20,21] Infections reported from the Pacific Coast have primarily been the result of contact with seawater.[18,22,23] In addition, there are a few reports of infections as the result of exposure to brackish fresh water in the southwestern and western United States.[17,24,25]

In most states, including Missouri, *Vibrio* infections other than cholera are generally not reportable, and it is impossible to measure the national incidence of vibriosis. In August 1989, the Kansas City Health Department declared infection with *Vibrio* spp. to be a reportable disease. The present report discusses cases of vibriosis known to the Health Department between 1980 and 1989.

Table 1
Vibriosis Reported in Kansas City, MO, 1980-1989

Year	Month	Age	Race	Sex	*Vibrio* species	Source	Fatal	Underlying disease	Food source
1984	July	59	W	M	*V. cholerae* non-01	Blood	Yes	Hemochromatosis Fibrosis	Raw Oysters
1984	Nov.	41	W	F	*V. cholerae* non-01	Feces	No	None	Raw Oysters
1986	April	56	W	M	*V. vulnificus*	Blood Leg ulces	Yes	Cirrhosis Diabetes	Raw Oysters
1987	Aug.	30	W	F	*V. parahaemolyticus*	Feces	No	None	Boiled shrimp
1987	Sept.	40	W	M	*V. parahaemolyticus*	Feces	No	None	Raw Oysters
1989	Nov.	64	W	M	*V. mimicus*	Feces	No	None	Raw Oysters

Report

Between 1980 and 1989, six non-related cases of vibriosis were reported to the Kansas City Health Department (Table 1). Two of the six individuals died as a result of the infection; both had underlying hepatic disease. Four different *Vibrio* spp. were identified by the state public health laboratories in Missouri or Kansas, or by the Centers for Disease Control, Atlanta: two *V. cholerae* non-01, two *V. parahaemolyticus*, one *V. mimicus*, and one *V. vulnificus*. The two fatalities were associated with infections by *V. cholerae* non-01 and *V. vulnificus*. Three of the infections were in non-Missouri residents who ate in Kansas City restaurants, as did two of the resident cases. Four of these five patients had eaten raw oysters, while the fifth individual ate peeled boiled shrimp. The sixth person had eaten large quantities of raw oysters over a two-week period in a number of establishments in Florida, Louisiana and Missouri, and became ill after returning to Kansas City. None of the dining partners who consumed the same seafood items as these patients was reported to be ill. The difference was quantity. The patients consumed considerably more contaminated seafood than did their dining partners.

For the five cases involving local restaurants, the Health Department contacted the restaurant owners and reviewed their seafood purchase records. Any remaining oysters or shrimp from the lots in question were embargoed and destroyed; no bacterial cultures were taken. The Federal Food and Drug Administration was notified and that agency contacted the appropriate agencies in the states of origin. This was done to ensure that the shellfish were from approved harvesting areas and to alert those states to the Kansas City infections.

In addition to these six bacteriologically confirmed cases, in 1984 a seventh individual was reported with an appropriate history and clinical symptoms for vibriosis; however, no culture was taken. This patient developed diarrhea two days after eating large quantities of raw oysters at a local restaurant over a two-day period. He experienced up to seven bowel movements per hour and after four days sought medical help. After being placed on antibiotics effective against *Vibrio*, his illness resolved.

Discussion

Cases of vibriosis reported from inland states and provinces are uncommon in the literature and generally cover only one or two isolated incidents. However, these cases fit into four different epidemiologic patterns: 1) local consumption of contaminated shellfish shipped from another state;[5] 2) infection in a coastal area, followed by travel during incubation and manifestation of the illness in an inland community;[26] 3) infection acquired as a result of exposure to an inland brackish water source;[25] and 4) no known risk factor.[27,28] The cases from Kansas City fall into the first two categories.

Although the six cases reported here make up a small group compared to some reports from coastal communities, the epidemiologic characteristics are similar to those reports. These characteristics include older age, more males affected, mortality in persons with underlying diseases, and consumption of larger quantities of contaminated food. However, physicians in Missouri should be aware that vibriosis can appear with a wide variety of clinical presentations, and that asymptomatic intestinal passage of *Vibrio* spp. is common among persons eating seafood, whereas the risk of gastroenteritis is low.[29] While wound and gastrointestinal infections are most commonly encountered, infections of the ears, eyes, bones, central nervous system, heart, and other organs have been reported.[30-37]

Travel and food histories should alert the physician to the possibility of vibriosis in a patient with gastroenteritis. With other infections, including wounds, lack of travel to coastal areas does not preclude the diagnosis of vibriosis. This is especially true when the patient has been exposed to inland brackish waters, particularly in the southwestern and western states.[17,24,25] In addition to reports of infection in persons exposed to these waters, there is documentation of morbidity and mortality due to vibriosis among herbivorous animals in western Colorado,[38] and both 01 and non-01 *V. cholerae* strains have been isolated from aquatic birds in Colorado and Utah.[39] Thus, physicians should consider vibriosis in wider context than simply exposure to contaminated seafood or marine water.

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The Authors

GERALD L. HOFF, Ph.D.
DALE GIEDINGHAGEN, B.A.
MICHELLE C. THOMAS, M.S.

The authors are with the Division of Communicable Disease Control, Health Department, Kansas City, MO.

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Gerald L. Hoff, Ph.D.
Division of Communicable Disease Control
Health Department
1423 E. Linwood Blvd.
Kansas City, MO 64109

The Giant Paraesophageal Hernia: A Particularly Morbid Condition of the Esophageal Hiatus

Rodney J. Landreneau, M.D., Stephen R. Hazelrigg, M.D., Joel A. Johnson, M.D., John B. Marshall, M.D., David L. Gifford, M.D., Jack J. Curtis, M.D., and **Theresa M. Boley, B.S.N.**
Columbia, Missouri

The giant paraesophageal hernia is an uncommon but particularly morbid disorder of the gastroesophageal hiatus that may have life-threatening complications. The authors present three cases of these hernias to illustrate the potential complications of true hernias of the gastroesophageal hiatus.

Paraesophageal hernias are rare disorders of the gastroesophageal hiatus. Unlike the more common sliding hiatal hernia that can be managed medically in most cases, paraesophageal hernias are frequently complicated by life-threatening mechanical sequelae.[1] These true hernias have the same propensity for obstruction, incarceration, and strangulation as inguinal, umbilical and postoperative abdominal incisional hernias. We present three cases of giant paraesophageal herniation that demonstrate the particularly morbid complications that may occur.

Case Summaries

Case 1. A 76-year-old man presented to the emergency department with a 12-hour history of nausea, coffee-ground emesis and substernal chest pain. He was admitted to the intensive care unit to rule out myocardial infarction. Over the next several hours, the patient's chest pain worsened, although evaluation of enzymes and electrocardiogram remained normal. He developed symptoms of sepsis, with fever to 102°F and hypotension with systolic blood pressure of 90 mm Hg. A chest X-ray showed an abnormal retrocardiac air-fluid level and a left pleural effusion. A gastrograffin swallow examination demonstrated intrathoracic displacement of the stomach with evidence of extensive mediastinal extravasation of contrast (Fig 1). An emergent left thoracotomy was performed to manage this mediastinal sepsis. At thoracotomy, the gastric fundus was found to be incarcerated in a large hernia sac anterolateral to the esophagus. The sac was opened, revealing necrosis of the gastric cardia and distal esophagus at the torsion point of a gastroesophagel volvulus. The necrotic proximal stomach and distal esophagus were resected. The remaining stomach was reduced into the abdominal cavity and a gastrostomy performed through a separate incision. A nasogastric tube was used to drain the blindly ending remaining upper esophagus. The mediastinum and left side of the chest were then extensively drained. A stormy postoperative course followed, but the patient eventually recovered. His upper gastrointestinal tract was later repaired by substernal gastric bypass.

Case 2. An 82-year-old woman with a known "hiatus" hernia arrived in the emergency department following the acute onset of chest pain, shortness of breath and retching without being able to vomit. The patient denied significant gastroesophageal reflux symptoms but had experienced intermittent short episodes of similar chest pain and dysphagia for several years. Over the preceding 10 months the patient had been treated with inhaled bronchodilators for a new diagnosis of asthma. The patient's dysphagia had worsened over the preceding four months, resulting in a 35-pound weight loss. An initial chest X-ray demonstrated a large retrocardiac air-fluid level displacing the pulmonary parenchyma (Fig 2A). A nasogastric

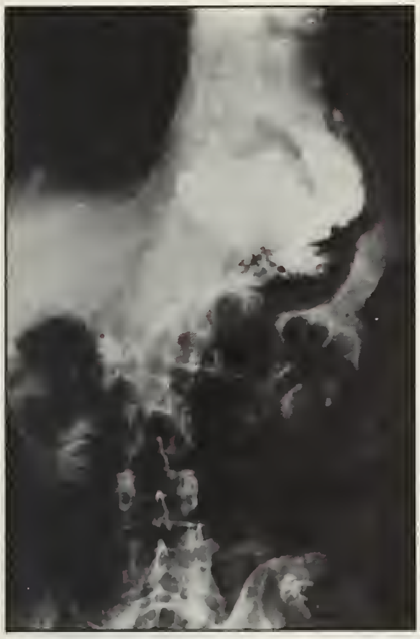

Fig. 1. Incarcerated gastric fundus with extensive mediastinal extravasation of contrast secondary to gastroesophageal strangulation.

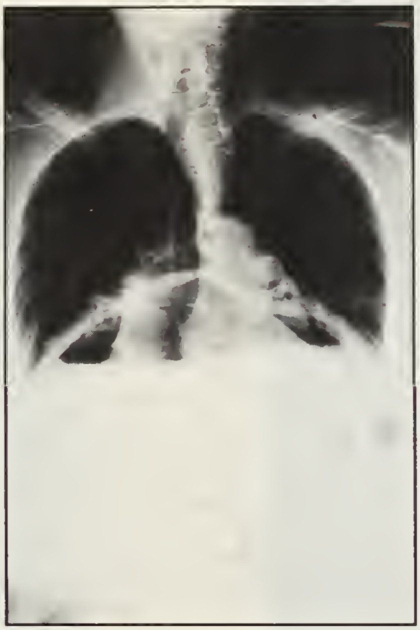

Fig. 2a. Giant paraesophageal hernia with large air-fluid level in mediastinum. The patient had been experiencing worsening episodes of wheezing, shortness of breath and substernal chest pain for several months.

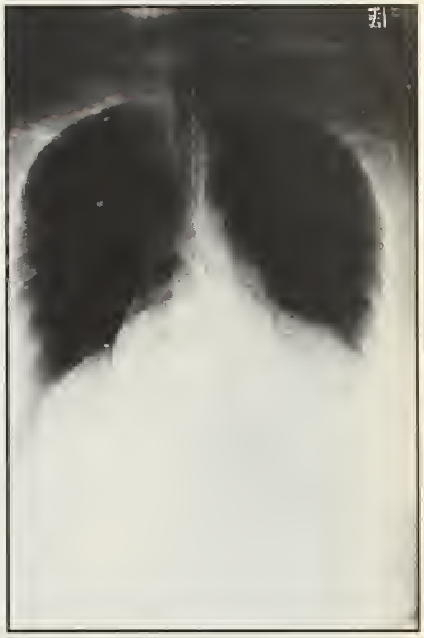

Fig. 2b. Nasogastric tube appearing in the intrathoracic stomach.

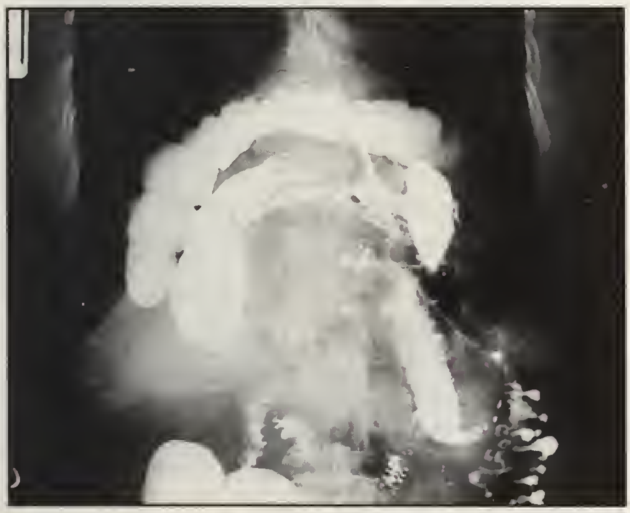

Fig. 3. Incarcerated gastric fundus and transverse colon within this patient's paraesophageal hernia sac.

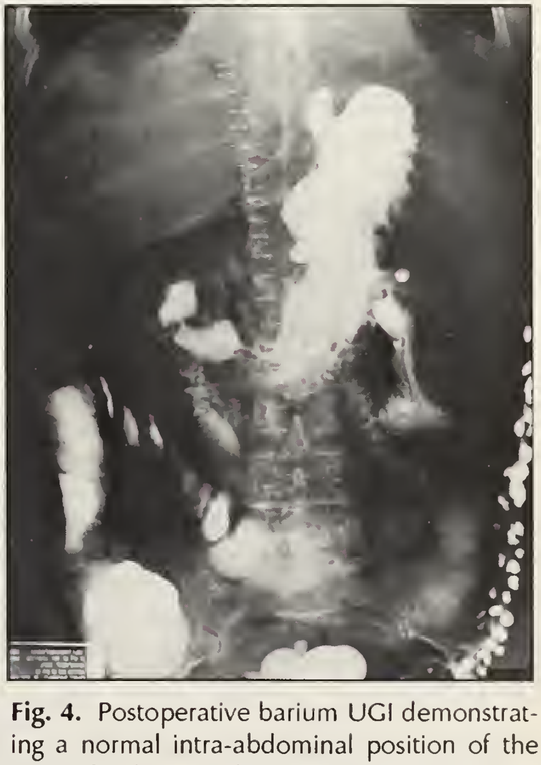

Fig. 4. Postoperative barium UGI demonstrating a normal intra-abdominal position of the gastric fundus pexed by a Stamm gastrostomy.

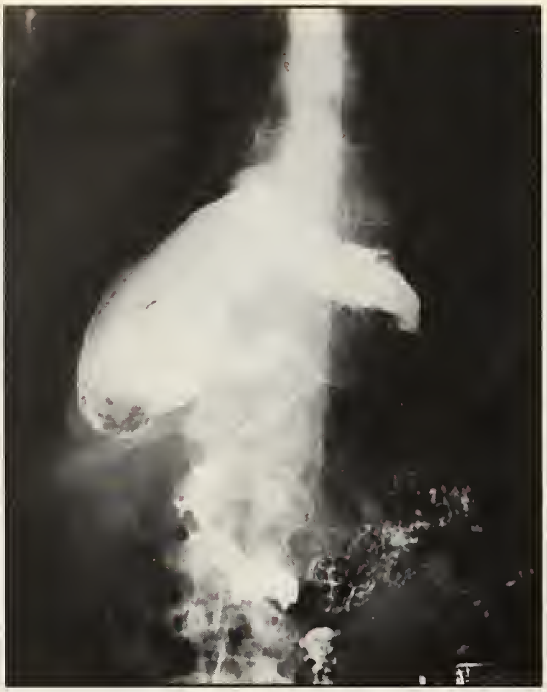

Fig. 5. Total displacement of the stomach into the chest with severe organo-axial malrotation in a patient with chronic gastrointestinal bleeding from stasis gastric ulcers in an incarcerated intra-thoracic stomach.

tube was inserted, which relieved the acute chest pain. The post-insertion chest X-ray showed the NG tube had entered the right hemithoroax (Fig 2B). An urgent upper GI series demonstrated an incarcerated gastric fundus within the right side of the chest. A concomitant gastrograffin enema X-ray examination revealed the entire transverse colon also to be within the large hiatal hernia sac (Fig 3). The patient was prepared for immediate surgery. The incarcerated gastric fundus and transverse colon were reduced through the abdomen. The left side of the chest was prepared in case thoracotomy was necessary for reduction of the incarcerated abdominal organs. Although the gastric fundus was edematous and congested, there was no evidence of necrosis. The transverse colon also demonstrated significant subserosal edema and venous congestion. The hernia sac was excised and an anterior hiatal crural repair accomplished after reduction of the abdominal viscera. A standard Stamm gastrostomy was performed to fix the stomach and reduce the possibility of further herniation. The patient's postoperative course has been satisfactory without recurrent symptoms (Fig 4).

Case 3. A 74-year-old man complained of intermittent right infra-mammary chest pain, nausea, and the passage of melanotic stools. The patient gave a long history of intermittent chest pain and heartburn. His vital signs were stable, but the initial laboratory evaluation demonstrated moderate anemia with a hemoglobin of 8.4 g/dL. An upper GI series showed the entire stomach was rotated into the posterior mediastinum (Fig 5). Urgent surgical repair was felt necessary. Endoscopy was deferred until the patient was anesthetized to avoid acute gastric distention and incarceration. Endoscopy revealed grade II distal esophagitis and a superficial gastric ulcer on the greater curvature of the herniated gastric fundus. We could not enter the duodendum because of the intrathoracic gastric volvulus. Abdominal exploration followed; preparation was also made for possible thoracotomy. The volvulus was reduced with moderate difficulty. The edematous and vascularly engorged gastric fundus was viable. A superselective vagotomy with Hill posterior gastropexy and repair of the crural defect was performed. The patient had total symptomatic relief after surgery.

Discussion

Hernia of the esophageal hiatus are generally classified as sliding or paraesophageal.[2] "Sliding" hernias account for 95% of all hiatal hernias and result from a lax phrenoesophageal ligament, which allows displacement of the gastroesophageal junction cephaled through the esophageal hiatus. Frequently these are clinically unimportant, although pathologic gastroesophageal reflux can certainly be associated with them. On the other hand, the paraesophageal hiatal hernias are true hernias, in which the gastroesophageal junction is stationary by the the gastric fundus and herniates into the chest through an anterior defect in the phrenoesophageal ligament. The sliding and paraesophageal hernias may also coexist, sujecting the patient to the complications of gastroesophageal reflux and the mechanical consequences of the true herniation.[3]

Our three cases of paraesophageal herniation illustrate the life-threatening gastroesophageal obstruction, chronic aspiration, stasis ulceration with bleeding, and gastric necrosis that may develop. Hill reported a 50% mortality among patients with paraesophageal hernia who had gastric incarceration.[4] Jamieson reported a 66% incidence of serious complications among patients observed with this condition.[2] Furthermore, Skinner and Belsy noted a 30% mortality from gastric strangulation, perforation or hemorrhage among patients diagnosed with paraesophageal hernias who were treated medically rather than surgically.[5]

Diagnosis can be difficult during the early course of the condition because herniation of the stomach

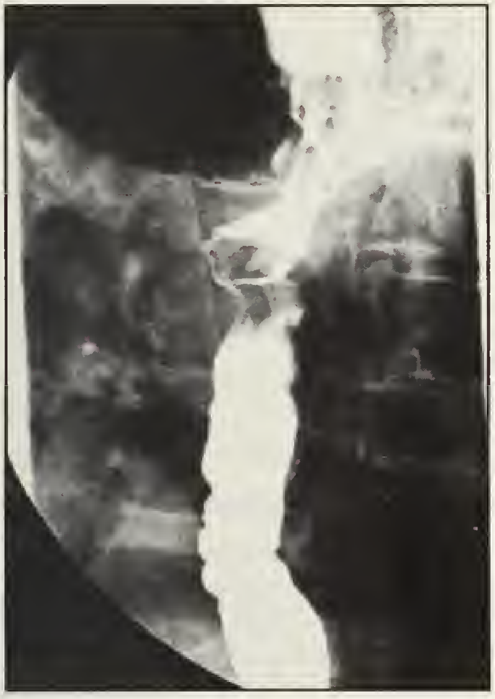

Fig. 6a. "Sliding" component of a mixed hiatal hernia that was initially the only abnormality appreciated on upper GI series.

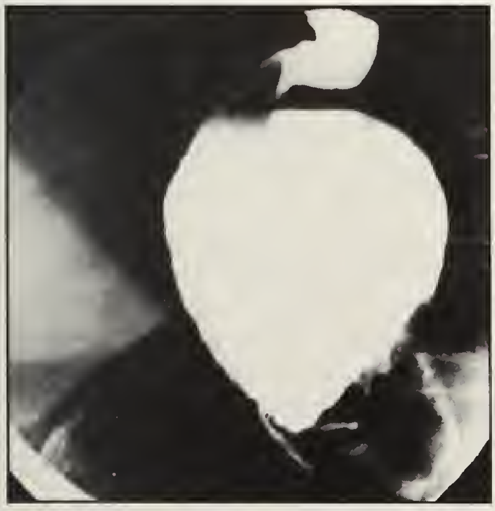

Fig. 6b. A "paraesophageal" component was noted later during same radiographic study when further gastric distention and external pressure was applied on the upper abdomen by the radiologist.

into the paraesophageal hernia sac may be intermittent. The actual herniation may initially be missed on barium upper GI examination (Fig 6A and B). This is of particular concern when the patient has a mixed form of hiatal hernia and only the sliding component is recognized on the initial examination. This emphasizes the need for repeat barium contrast examination at an appropriate time interval if atypical or persistent symptoms are noted. Not infrequently, the paraesophageal component is discovered on these subsequent studies.

Borchardt was the first to describe the symptom triad of chest pain, retching without the ability to vomit, and the inability to pass a nasogastric tube beyond the intrathoracic incarcerated stomach.[6] He recognized these as common findings in patients with gastric volvulus due to organo-axial rotation of the stomach within the paraesophageal hernia sac. When these conditions are seen, immediate exploration should be performed to reduce the incarcerated stomach before strangulation occurs.[7]

The surgical approach to paraesophageal hernias varies among surgeons and the pathologic condition of the patient.[8,9] The vital components of repair are reduction of the herniated viscus, excision of the hernia sac, and closure of the hernia defect. Gastropexy by direct suture to the abdominal wall or by decompressive gastrostomy may help to prevent hernia recurrence.[7,9] In the elective setting, a partial or total fundoplication should be considered when esophagitis is documented prior to surgery or when the patient reports a significant history of gastroesophageal reflux.[8]

We present three cases of giant paraesophageal hernia to illustrate the potential serious complications of these true hernias of the gastroesophageal hiatus. Although paraesophageal hernias are frequently found in elderly patients, we recommend repair for all but the most frail individuals.[10] The risk from surgery is minimal, and relief of symptoms, without recurrence of hernia can be expected in 90% of cases.[9]

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The Authors

RODNEY J. LANDRENEAU, M.D.
STEPHEN R. HAZELRIGG, M.D.
JOEL A. JOHNSON, M.D.
JOHN B. MARSHALL, M.D.
DAVID L. GIFFORD, M.D.
JACK J. CURTIS, M.D.
THERESA M. BOLEY, B.S.N.

The authors are affiliated with the Division of Cardiothoracic Surgery and the Division of Gastroenterology in the Departments of Surgery and Medicine at the University of Missouri School of Medicine in Columbia, Missouri.

Reprints

Rodney J. Landreneau, M.D.
Assistant Professor of Cardiothoracic Surgery
MA312, One Hospital Drive
University of Missouri
Columbia, MO 65212

Magnetic Resonance Evaluation of Infantile Myofibromatosis

Curtis C. Stautz, M.D.
Kansas City, Missouri

Although infantile myofibromatosis is rare, it represents the most common fibrous tumor of infancy. The author presents a case where magnetic resonance imaging (MRI) was used to evaluate the tumor.

Infantile myofibromatosis, first described by Stout in 1954, is relatively rare, yet it represents the most common fibrous tumor of infancy. Magnetic resonance imaging (MRI) has been suggested as the imaging modality of choice for the diagnosis of this disease. The disease outcome varies widely, depending on the number of lesions and presence or absence of visceral involvement.[1] We describe the evaluation by MRI of a patient with this tumor.

Case Report

This 6-year-old girl was first examined at age three with a palpable swelling in the left side of her neck. She complained of some pain, which involved the left side of the mandible. Biopsy at that time revealed infantile myofibromatosis. The mandibular swelling progressed until surgery was deemed necessary to control the pain and preserve the jaw's function. She then developed a recurrent palpable nodule in the left side of her neck, at the site of the previous operation. An MRI examination was performed to evaluate the extent of the lesion. We chose MRI because of the difficulties in examining the area following surgery.

The MRI examination was performed on a 1.5 Tesla unit with the use of both a head coil and a neck surface coil. Best images were obtained with the neck coil in the axial and coronal projections using spin-echo technique (TR=2000 ms; TE=20/80 ms).

The T_1 weighted images showed intermediate signal intensity within the lesion, while T_2 weighted images showed the irregularly lobulated tumor to have high signal intensity (Figs 1A and B). The lesion was contained superiorly by the temporal bone, medially by the jugular vein, and lay deep to the left sternocleidomastoid muscle although it did not involve the muscle (Fig 2). Additional lesions were not found.

We are now discussing the patient's future treatment and the need for further surgery. The primary treating physicians believed the MR images, showing good definition of the tumor's extent, were helpful.

Discussion

Since 1954, the understanding of infantile myofibromatosis has progressed through various stages and categorizations. The cause remains unknown and the possibility of genetic transmission continues to be investigated. This most common fibrous tumor of infancy is best classified by the number of lesions and the presence or absence of visceral involvement.[2]

Approximately half of patients have solitary lesions involving the skin, muscle, or subcutaneous tissue.[2,3] Twenty-five percent of these children are seen medically after the neonatal period.[2] Their lesions are usually felt incidentally, or after they became visible. There are few symptoms except occasional pain due to nerve compression.

The remaining patients have multiple lesions,

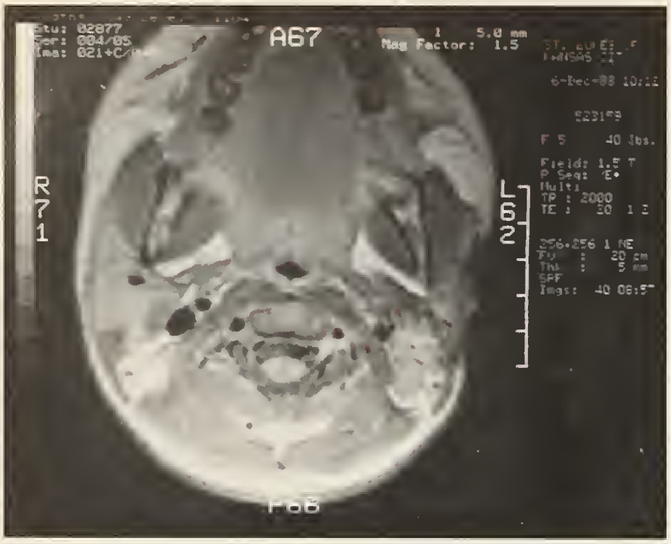

Fig. 1a. Axial T_1-weighted images showing the intermediate signal intensity from the tumor deep to the left sternocleidomastoid muscle.

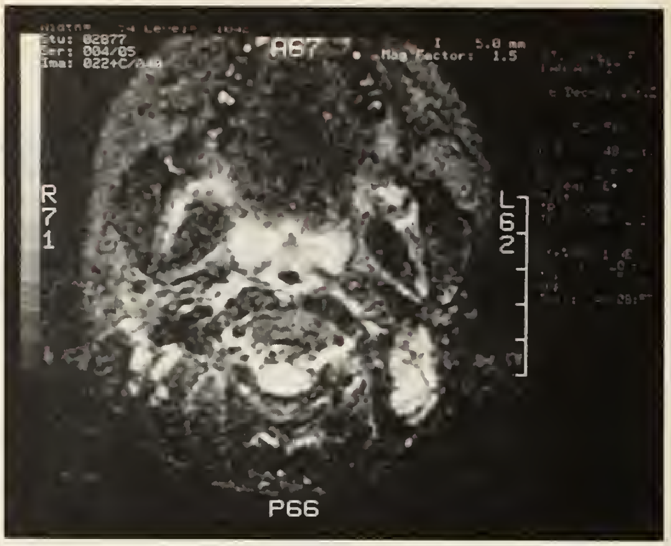

Fig. 1b. T_2-weighted images showing high signal intensity from the lesion.

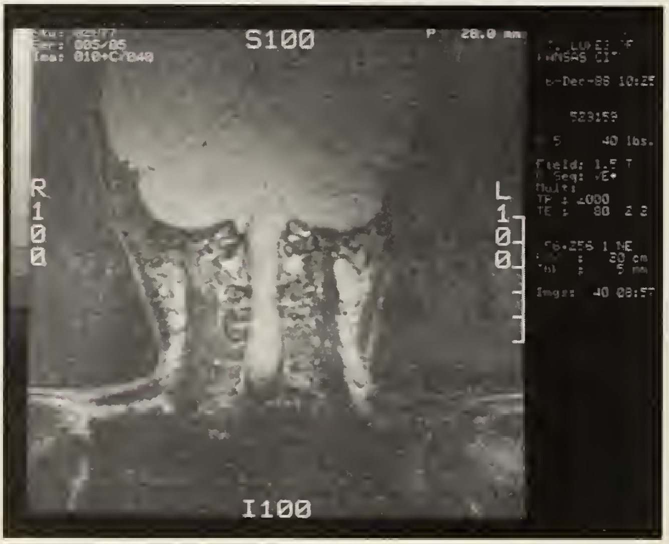

Fig. 2. Coronal T_2-weighted image showing the high signal intensity oval tumor well-delineated within the left neck.

numbering from two to 100, and are most common in the subcutaneous tissues. Other sites include bone, lung, myocardium, and the gastrointestinal tract.[4] Renal and CNS lesions have been reported; involvement of the lymph nodes has never been reported. These lesions are also often asymptomatic. When symptoms occur, they are usually pulmonary in nature or due to obstruction of the GI, renal, or cardiovascular systems.

The diagnosis of infantile myofibromatosis is made by biopsy and examination of the firm, rubbery, usually superficial lesion. Histologic examination will reveal evidence of a distinct zoning pattern and staining characteristics of myoblastic and fibroblastic cells.[3]

The prognosis depends upon the number of lesions and the presence or absence of visceral involvement. Patients with single lesions show a uniformly benign and self-limited course. Spontaneous regression of the lesion is the norm. As in our case, some patients require operation because of the location of the lesion. Of these patients, 7% will have local recurrance.[5]

Of the patients with multiple lesions, two-thirds have lesions confined to bone and soft tissues. These patients usually do well. Multicentric lesions that involve the viscera herald a 75% mortality. Death is usually due to cardiopulmonary or gastrointestinal complications and often occurs shortly after birth.

A previous case report documents the use of MRI to evaluate a young patient with infantile myofibromatosis.[1] In that case, as with ours, whether single or multiple, the lesions of infantile myofibromatosis are easily detected on T_2-weighted spin-echo images (TR=2000 ms; TE=80 ms). In the case of a single lesion, the non-invasive and non-ionizing properties of MRI are perfect for following regression. In the case of multiple lesions, where the clinical course is less certain, MRI can be used to better detemine the existence and extent of visceral involvement. We believe MRI is the method of choice for imaging the lesions of this disease.

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The Author

CURTIS C. STAUTZ, M.D.

Dr. Stautz is a radiologist at St. Luke's Hospital in Kansas City, Missouri.

Reprints

Curtis C. Stautz, M.D.
St. Luke's Hospital
Department of Radiology
4400 Wornall Road
Kansas City, MO 64111

Missouri State Medical Association
1990-91
Policy Manual

This manual shall be a guide for MSMA members to the stand taken by the House of Delegates of the Missouri State Medical Association on issues involving Association policy.

The manual will be updated and revised according to House actions. The date in parentheses following each policy statement denotes the year it was adopted by the House.

Alcohol Abuse

The MSMA continues to support the work of community-based organizations such as AA, Al-Anon, Narcotics Anonymous, and others, and it reaffirms its support of professional and public education efforts designed to alert people to the dangers of alcohol and drug abuse. In addition, the MSMA continues to support the Physician Rehabilitation Program and similar programs aimed at helping the victims of alcohol and drug abuse to recover successfully. (1987)

Board of Healing Arts

The MSMA opposes any legislation that would dilute the licensing power of the State Board of Registration for the Healing Arts to license physicians of good ethical and moral character. (1975)

Cancer, Reporting

The MSMA supports efforts to require hospitals to report to the state all malignant neoplasms, with the exclusion of non-melanomatous cutaneous malignancies. These statistical data are necessary to determine relationships between cancer control efforts and the incidence of cancer in the state. (1982)

Chelation Therapy

The MSMA supports the use of IV chelation therapy in FDA-approved applications only. (1990)

Chiropractic

The MSMA is unaware of any scientific evidence that proves that spinal manipulation and adjustment are appropriate treatments for such health conditions as hypertension, heart disease, stroke, cancer, diabetes, and infection. Therefore, the MSMA will continue to warn the public of the health hazards of entrusting the treatment of such conditions to practitioners who maintain that all disease is caused by the misalignment of the spinal vertebrae and can be cured by manual manipulation and adjustment of the spine.

A physician may refer a patient for diagnostic or therapeutic services to another physician, licensed limited practitioner, or any other licensed provider of health care services whenever the physician feels that these services will benefit the patient. As is the case with physician referrals, limited practitioner referrals should be based on the practitioner's individual competence and ability to perform service to the patient.(1981)

Definition of Death

A person shall be considered dead if, in the announced opinion of a licensed physician, based on ordinary standards of medical practice, he has experienced an irreversible cessation of spontaneous respiratory and circulatory functions. In the event that artificial means of support preclude a determination that these functions have ceased, a person shall be considered dead if, in the announced opinion of a licensed physician, based on ordinary standards of medical practice, he has experienced a total and irreversible cessation of spontaneous brain functions, including the brain stem. Death shall have occurred at the time when the relevant functions ceased. (1987)

Diagnostic Tests, Ordering Of

With the exception of not-for-profit health fairs, the

MSMA is opposed to, and considers unethical, the practice of ordering laboratory studies and other diagnostic tests without evidence or indication obtained by a physician in a history and physical examination. (1989)

Dioxin

The MSMA supports an active campaign to bring accurate information on dioxin before the public to prevent irrational reaction and possible unjustified public fright and to prevent dissemination of possible erroneous information until such time as epidemiological studies have been completed. (1983)

The MSMA supports continuing monitoring of dioxin research, recognizing that to date no serious human disease has been conclusively linked to exposure to the chemical. The findings of the AMA Council on Scientific Affairs Panel on Toxic Substances are supported by the MSMA. (1985)

Drugs, Generic Prescribing

The MSMA opposes governmental interference into the practice of medicine through mandated generic prescribing of drugs. (1976)

Drugs, Physician Dispensing

The MSMA supports the physician's right to dispense drugs and devices when it is in the best interest of the patient and consistent with the AMA's published ethical guidelines. (1988)

Drugs, Therapeutic Substitution

The MSMA opposes the therapeutic substitution of prescribed medications. (1990)

Drunken Driving

The MSMA supports the development of local task forces to study and remedy the problem of drunken driving. These task forces should include physicians, prosecutors, law enforcement officers, and legislators. (1990)

Education, Loans for Medical Students

The MSMA supports continued federal and state subsidized, low-interest loan programs for medical students, with properly enforced repayment. (1982)

Education, School Health

Factual, academically founded courses should be developed and implemented by the Missouri Department of Education to teach human physiology and pathophysiology at the elementary and secondary levels of the school system. (1974)

County medical societies are urged to work with local school districts to assist in providing comprehensive health education programs, and the state colleges of Missouri are urged to prepare qualified health instructors trained to integrate health concepts into all the courses they teach. (1972)

Emergency Care

The MSMA supports the American College of Emergency Physicians and the American College of Surgeons standards for direct medical control of pre-hospital (emergency) care by qualified physicians. (1986)

Ethics, Education in Medical School

The MSMA supports the teaching of medical ethics to medical students and resident physicians, including information on the workings of professional disciplinary agencies. (1987)

Fee-for-service Medicine

The MSMA believes that the traditional American fee-for-service medical system should be given equal consideration and equal treatment under the law as other systems of health care provision. (1990)

Fee Splitting

The MSMA reaffirms its support of the AMA Judicial Council's position that the acceptance of financial consideration in exchange for patient referrals, or fee splitting, is unethical and improper. (1985)

Fluoridation

The MSMA, realizing the medical importance of naturally occurring fluoride taken in proper concentration into the human body, recommends the addition of fluoride to all drinking water systems in Missouri in the concentration of one part per million. (1972)

Foreign Medical Graduates

The MSMA Council and committees are encouraged to consult with Foreign Medical Graduate groups when subjects of interest come up. All physicians, foreign medical graduates included, are encouraged to participate in their component medical societies, the MSMA, and the AMA. (1982)

Handicapped

The MSMA is involved in seeking positive ways to encourage training and rehabilitation for disabled persons. The MSMA wants to work with existing organizations to remove physical and emotional barriers that prevent people from working. (1982)

Health Care Costs

The MSMA encourages individual physicians to do their part in helping moderate increases in health care costs by avoiding overutilization and by using restraint when considering fee increases, in order to keep them in line with general cost of practice increases. (1989)

Health Care Surrogate Decisionmaker

The MSMA supports legislation allowing competent Missourians to appoint a health care surrogate, empowered by the patient to make medical decisions for him if he be unable. Such authority should include the power to accept or refuse any and all medical treatment for the patient, including artificial nutrition and hydration. (1990)

Hospital Medical Staffs, Autonomy

Since the hospital medical staff is a largely autonomous entity within the hospital, the MSMA supports the securing of separate legal counsel by medical staff members when considering matters of rules, regulations and bylaws. (1985)

Hospital Medical Staffs, Membership

The hospital medical staff cannot be forced to accept for full voting membership any member of the allied health professions. This is in keeping with the MSMA's support of existing JCAHO and AMA guidelines that state no hospital governing board can unilaterally amend the bylaws of a self-governing medical staff, nor can it unreasonably withhold approval of the bylaws. (1987)

The MSMA supports existing state statutes and regulations that delineate requirements for hospital licensure and individual eligibility for medical staff privileges. (1989)

Human Rights

The MSMA continues to support the dignity of the individual, the importance of human rights and the sanctity of human life, and continues to oppose any discrimination based on an individual's ethnic origin, religious or political beliefs, or any such reprehensible policies. (1986)

Immunization

The MSMA supports American Academy of Pediatrics guidelines for immunization of children. (1987)

Indigent Care

The MSMA urges all physicians to share in the care of indigent patients. (1988)

Insurance, Coverage for Catastrophic Illness

The MSMA supports the plan for providing catastrophic health insurance as outlined in the AMA Report MM, Annual Meeting 1986. (1987)

Insurance, Charge for Extra Claim Forms

Physicians should feel free to charge for the additional service of filing more than one insurance claims form for an individual patient, especially if different claim forms are required rather than a photocopy of the original form. (1973)

Insurance, Chemotherapeutic Costs

The MSMA should sponsor appropriate legislation that would make mandatory the offering of insurance coverage for reimbursement of chemotherapeutic costs, particularly when the therapy is administered on an outpatient basis. (1977)

Insurance, Insurance Company Communications

The MSMA urges health insurance companies to cease to communicate abusive and inappropriate language to patients regarding their physicians' fee structures and services. (1985)

Insurance, Maternity Coverage

The MSMA supports inclusion in all insurance policies for those in childbearing years of a clause providing complete maternity coverage.

In order to provide continuity of coverage, the following eligibility period should be written into all insurance policies concerning benefits for obstetric care: "A pregnancy which begins while the insurance is in force should be covered until the termination of the puerperium and until the newborn infant is discharged from the hospital to home care." (1974)

Insurance, New Waiting Periods

The MSMA believes employees should not have to undergo a new waiting period for coverage of pre-existing illness whenever their employer changes insurance companies, particularly when the change is being made in the interest of controlling health care coverage costs. (1985)

Insurance, Psychiatric Illnesses

The MSMA recommends that the state require all health and accident insurance policies sold in Missouri to provide coverage for psychiatric illnesses equivalent to benefits for other medical and physical illnesses. (1978) Reaffirmed (1985)

Insurance, Right to Know

The MSMA encourages all third party payors to provide an easily understood explanation of their benefits and coverage to their policyholders. (1986)

Insurance, Terminology

The MSMA encourages local insurance carriers to be careful about using literature containing the wording "usual, customary and reasonable" when describing insurance benefits paid. This leads some patients to believe physicians' charges are "unreasonable." The MSMA also encourages physicians to include in their patient information materials an explanation as to why the amount billed may sometimes be more than the insurance benefit paid. (1982)

Laboratory, Collecting Fee

The MSMA supports payment under Medicaid to the physician for his service in collecting a specimen for tests performed in an outside laboratory. (1977)

Licensing, Federal

The MSMA opposes any moves to require federal licensure of health manpower. (1976)

Malpractice, Countersuits

Any Missouri physician found not to be negligent in a malpractice suit shall have the assistance of the MSMA in determining if there exists a reasonable basis for the physician to commence an action for malicious prosecution arising out of such case. (1976)

Mandated Second Opinion

The MSMA suggests that the physician who renders a mandated second opinion for a proposed surgical procedure not accept that person as a patient for the proposed surgical procedure. (1987)

Mandatory Assignment

The MSMA is opposed to mandatory assignment under Medicare. (1984)

The MSMA is opposed to the withholding of medical licensure based on the physician's non-acceptance of Medicare assignment. (1987)

Medical Examiner System

The establishment of a county medical examiner system as a replacement for the county coroner system is strongly recommended. (1971)

Medicare-Mandated Restrictions

The MSMA opposes Medicare-mandated restrictions on any laboratory tests, referrals, medical examinations or any financial arrangements that might be agreed upon between physician and patient. (1988)

Mentally Incompetent Patients, Hospitalization

The MSMA urges extension of the time limit from 7 to 21 days before the family of a mentally incompetent patient must petition the court for continuation of a hospitalization. (1985)

Motorcycle Head Gear

The MSMA urges all motorcyclists to wear protective head gear (helmets) to prevent death and disability. (1977)

MSMF Loans

The Missouri State Medical Foundation requires membership in the state medical association for those medical students eligible for membership and receiving assistance from the Foundation. (1980)

Nursing Education

The MSMA supports all present forms of nursing education as being essential to meeting the health care needs of the state and local community. (1980)

Nurse Practitioners

The MSMA supports the doctrine that physicians should retain control of medical care and will challenge any person who is practicing medicine without a license, in the courts of law if necessary. (1978)

Peer Review Organization Data

The MSMA asks that data from the Missouri Patient Care Review Foundation concerning decision-making criteria for Medicare admission be made available to Missouri physicians as a way to ensure that denials are not having a negative impact on the quality of medical care for these patients. (1985)

The MSMA supports the current AMA program of data collection on the costs of PRO implementation and the inequities in the PRO system. (1987)

Peer Review Organization Review

The MSMA reaffirms its belief that physicians' work should be reviewed only by other physicians. In addition, the MSMA supports the modification of PRO standards of reviewer anonymity, believing that the reviewers' work should also be subject to review. (1990)

Physician, as Patient Advocate

The MSMA affirms its support of the physician in the role of patient advocate in the consumption of health care services, particularly when this role conflicts with the economic goals of the physician's employing third party. (1987)

Physician, Right to Choose

The MSMA supports the right of every physician to choose whom he or she will accept as patients and also to exercise his or her choice by the terms of contractual agreements with other physicians, medical groups, hospitals or other institutions. (1981)

Physician, Right to Hospital Privileges

The MSMA is opposed to the granting of hospital privileges to a physician based on that physician's profitability to the hospital. (1988)

Political Process

The Association encourages physicians to become Key Contacts, thereby increasing medicine's role in influencing actions taken by the Missouri General Assembly on issues of importance to our patients and our profession. (1983)

Practice of Medicine, Definition

The MSMA believes the practice of medicine includes, but is not limited to, the following:

1. Direct patient care by the responsible physician of record or his consultants;
2. Indirect patient care by ancillary consultants (e.g. radiologists, pathologists)
3. Use of medical knowledge and experience in peer reviewed activities;
4. Expert testimony in court on medical issues, and
5. Any contractual influence on the specific care of a specific patient relative to their medical needs (e.g. preadmission denial, post admission stay; denial of appropriate tests or treatment). (1990)

Prepaid Health Care Plans, Emergency Care

The MSMA believes prepaid health plans should be required by law to authorize and pay for all emergency medical care needed by its subscribers, even when that care is rendered by a non-plan physician. In addition, it is the MSMA's position that the plans should cover the care of the emergency department patient who must be transferred to another facility for further medical attention. (1990)

Primary Medical Care

Primary medical care shall be defined as only that care given by a licensed graduate of a medical or osteopathic school. (1977)

Recycling

The MSMA strongly supports state and local recycling efforts. (1990)

Registered Dietitians

The MSMA supports the concept that any person using the title "dietitian" should be a Registered Dietitian. (1987)

Right to Refuse Treatment

Believing that critical decisions should be left to the patient, the family, or health care surrogate, and not to the state, the MSMA opposes any legislation that would require court approval for the withdrawal of life support systems, including artificial hydration and nutrition. The MSMA opposes legislation that would impose an arbitrary waiting period before such life support could be withdrawn. (1990)

Smoking

The MSMA supports legislation directed at designating non-smoking areas in public places, and prohibits smoking at all MSMA House of Delegates meetings and scientific sessions held in conjunction with these meetings. (1981)

The MSMA actively supports legislation prohibiting cigarette smoking in public indoor areas. (1983)

Third Party Reimbursement, Physicians

The MSMA supports equal reimbursement for equal professional services provided by a physician, regardless of his geographic location. (1982) Reaffirmed (1987)

Third Party Reimbursement, Hospital DRGs

The MSMA believes it is unfair for Medicare to grant a lower payment to rural hospitals, as compared to urban hospitals, for patient care under the same DRG. (1988) Reaffirmed (1989)

Utilization Review, Reimbursement

In those hospitals that conduct utilization review of any inpatient care, compensation of physicians for such review is a legitimate expense. The cost of such review should be included in hospital rates and reimbursable costs regardless of the source of payment. (1976)

Proposed Amendment to the MSMA Constitution

REPORT OF THE COMMITTEE ON CONSTITUTION AND BYLAWS

Committee on Biomedical Ethics — Council on Ethics and Judicial Affairs

The following amendment to the Constitution is proposed. As set forth in the Constitution, this amendment was to be voted upon at the 1990 Annual Convention, and then lay over for one year. It becomes formally adopted as an amendment upon a second affirmative vote at the 1991 Annual Convention. (Bracketed material to be deleted; underlined material to be added.)

Article VI. [Judicial Council] Council on Ethics and Judicial Affairs

The [Judical Council] Council on Ethics and Judicial Affairs shall be the judicial body of the Association. It shall consist of five active members nominated by the President and elected by the House of Delegates.

Continuing Medical Education

The continuing medical education accreditation program of the MSMA has full approval by the AMA's Council on Medical Education. The institutions and functions listed here qualify for Category I credit for the AMA Physician's Recognition Award. All accredited institutions in Missouri are invited to send this information for listing in MISSOURI MEDICINE. Please remember to include the name of the individual who can be contacted at your institution for additional information about your CME events.

December

1 **Plastic Techniques in Suturing** — Location: Adam's Mark Hotel, Charlotte, NC. Contact: Kay Harris, P.O. Box 62682, 141 Business Park Drive, Virginia Beach, VA 23462. 804/473-2443.

4 - 5 **Transesophageal Echocardiography Course** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: St. Louis University CME Office, 1402 S. Grand Blvd., St. Louis, MO 63104. 1-800-533-2712.

6 **Current Issues in Medical Ethics** — Location: Allis Plaza Hotel, Kansas City, MO. Contact: The Ed Bixby Institute for Postgraduate Medical Education, Research Medical Center, 2316 E. Meyer Blvd., Kansas City, MO 64132. 816/276-4306 or 1-800-892-5771, ext. 4306, in Missouri.

8 **Plastic Techniques in Suturing** — Location: The Westin William Penn, Pittsburgh, PA. Contact: Kay Harris, P.O. Box 62682, 141 Business Park Drive, Virginia Beach, VA 23482. 804/473-2443.

8 - 9 **Excimer Laser Course (Didactic and Wet Lab)** — Location: Eye Foundation of Kansas City, MO. Contact: John W. Irvine, M.D., Eye Foundation of Kansas City, 2300 Holmes, Kansas City, MO 64108. 816/881-6150.

10 **City-Wide Radiology Conference: Color Flow Doppler-Update 1990** — Location: Mallinckrodt Institute of Radiology, St. Louis, MO. Contact: R. Gilbert Jost, M.D., Chief of Diagnostic Radiology, Mallinckrodt Institute of Radiology, 510 S. Kingshighway, St. Louis, MO 63110. 314/362-7130.

January 1991

5 - 10 **Rheumatology for the Practicing Physician** — Location: Keystone Resort, Colorado. Contact: Cathy Caruso, CME Office, Washington University School of Medicine, 660 S. Euclid, Box 8063, St. Louis, MO 63110. 1-800-325-9862 or 314/362-6893.

9 - 11 **Tips: Strengthending Instructional Skills in the Health Professions** — Location: St. Louis University School of Nursing, St. Louis, MO. Contact: St. Louis University School of Medicine, CME Office, 1402 S. Grand Blvd., St. Louis, MO 63104. 1-800-553-2712.

11 **Clinical Conferences in Otolaryngology/Head & Neck Surgery: Rhinoplasty** — Location: St. John's Mercy Medical Center, St. Louis, MO. Contact: St. Louis University School of Medicine, CME Office, 1402 S. Grand Blvd., St. Louis, MO 63104. 1-800-553-2712.

14 **City-Wide Radiology Conference** — Location: St. Louis University, St. Louis, MO. Contact: R. Gilbert Jost, M.D., Director, Chief of Diagnostic Radiology, Mallinckrodt Institute of Radiology, 510 S. Kingshighway, St. Louis, MO 63110. 314/362-7130.

18 - 20 **Advanced Trauma Life Support Provider Course** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: St. Louis University CME Office, 1402 S. Grand Blvd., St. Louis, MO 63104. 1-800-553-2712.

February

1 **ACLS Recertification Course** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: St. Louis University School of Medicine, CME Office, 1402 S. Grand Blvd., St. Louis, MO 63104. 1-800-553-2712.

6 - 8 **Peritoneal Dialysis Conference** — Location: Opryland Hotel, Nashville, TN. Contact: Barry Kling, University of Missouri-Columbia School of Medicine, Office of Continuing Education, MA215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

8 **Clinical Conferences in Otolaryngology/Head & Neck Surgery: Allergy and Otolaryngology: A Dynamic Interface** — Location: St. Louis University, Margaret McCormick Doisy Learning Resources Center, St. Louis, MO. Contact: St. Louis University School of Medicine, CME Office, 1402 S. Grand Blvd., St. Louis, MO 63104. 1-800-553-2712.

8 - 10 **MAFP Young Physicians** — Location: Hilton Plaza Hotel, Kansas City, MO. Contact: Barry Kling, University of Missouri-Columbia School of Medicine, Office of Continuing Education, MA215 Health Sciences Center, Columbia, MO 65212.

11 **5th Annual Daniel R. Biello Memorial Lecture** — Location: Mallinckrodt Institute of Radiology, St. Louis, MO. Contact: R. Gilbert Jost, Chief of Diagnostic Radiology, Mallinckrodt Institute of Radiology, 510 S. Kingshighway, St. Louis, MO 63110. 314/362-7130.

14 - 17 **Microsurgery of the Cerebellopontine Angle and Cranial Base** — Location: St. Louis University Medical Center, St. Louis MO. Contact: St. Louis University School of Medicine, CME Office, 1402 S. Grand Blvd., St. Louis, MO 63104. 1-800-553-2712.

21 - 22 **Advanced Cardiac Life Support Course** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: St. Louis University CME Office, 1402 S. Grand Blvd., St. Louis, MO 63104. 1-800-553-2712.

21 - 24 **Rhinoplasty** — Location: To be announced. Contact: Cathy Caruso, CME Office, Washington University School of Medicine, 660 S. Euclid, Box 8063, St. Louis, MO 63110. 1-800-325-9862 or 314/362-6893.

March

1 - 3 **Organizational Systems** — Location: University of Missouri, Columbia, MO. Contact: Barry Kling, University of Missouri-Columbia School of Medicine, Office of Continuing Education, MA215 Health Sciences Center, Columbia, MO 65212. 314/882-4105.

4 - May 20 **17th Annual Internal Medicine Review (Monday Evenings)** — Location: Steinberg Amphitheater, The Jewish Hospital, St. Louis, MO. Contact: Cathy Caruso, CME Office, Washington University School of Medicine, 660 S. Euclid Ave., St. Louis, MO 63110. 314/362-6893 or 1-800-325-9862.

8 - 9 **4th Annual Contact Lens Course** — Location: Washington University Medical Center, St. Louis, MO. Contact: Cathy Caruso, Washington University School of Medicine, CME Office, 660 S. Euclid, Box 8063, St. Louis, MO 63110. 1-800-325-9862 or 314/362-6893.

8 - 9 **Advanced Trauma Life Support Provider Course** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: St. Louis University School of Medicine, CME Office, 1402 S. Grand Blvd., St. Louis, MO 63104. 1-800-553-2712.

11 **City-Wide Radiology Conference: Fundamental Observations in Chest Radiology** — Location: Mallinckrodt Institute of Radiology, St. Louis, MO. Contact: R. Gilbert Jost, M.D., Chief of Diagnostic Radiology, Mallinckrodt Institute of Radiology, 510 S. Kingshighway, St. Louis, MO 63110. 314/362-7130.

15 **Clinical Conferences in Otolaryngology/Head & Neck Surgery: Endoscopic Sinus Surgery** — Location: St. Joseph's Hospital, St. Charles, MO. Contact: St. Louis University School of Medicine, CME Office, 1402 S. Grand Blvd., St. Louis, MO 63104. 1-800-553-2712.

22 **Ninth Annual Symposium on Geriatric Medicine** — Location: Breckinridge Frontenac Inn, St. Louis, MO. Contact: St. Louis University School of Medicine, CME Office, 1402 S. Grand Blvd., St. Louis, MO 63104. 1-800-553-2712.

April

4 **In Vivo Magnetic Resonance Spectroscopy IV** — Location: The Ritz-Carlton, St. Louis, MO. Contact: Radiology Postgraduate Education, Room C-324, University of California School of Medicine, San Francisco, CA 94143. 415/476-5731.

6 **Hypercholesterolemia: Practical Aspects to Patient Management** — Location: Hyatt Regency, Union Station, St. Louis, MO. Contact: St. Louis University School of Medicine, CME Office, 1402 S. Grand Blvd., St. Louis, MO 63104. 1-800-553-2712.

8 **Leroy Sante Lecture** — Location: St. Louis University, St. Louis, MO. Contact: R. Gilbert Jost, M.D., Chief of Diagnostic Radiology, Mallinckrodt Institute of Radiology, 510 S. Kingshighway, St. Louis, MO 63110. 314/362-7130.

10 - 13 **Treatment of Surgical Spine Disease** — Location: The Ritz-Carlton Hotel, St. Louis, MO. Contact: Cathy Caruso, CME Office, Washington University School of Medicine, 660 S. Euclid, Box 8063, St. Louis, MO 63110. 1-800-325-9862 or 314/362-6893.

12 - 14 **Annual Geriatric Psychiatry Conference: Recognition and Treatment of Problem Behaviors in Long Term Care** — Location: Tan-Tar-A Resort, Osage Beach, MO. Contact: St. Louis University School of Medicine, CME Office, 1402 S. Grand Blvd., St. Louis, MO 63014. 1-800-553-2712.

18 - 21 **Advanced Microsurgery of the Lumbar & Cervical Spine** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: St. Louis University School of Medicine, CME Office, 1402 S. Grand Blvd., St. Louis, MO 63104. 1-800-553-2712.

April

22 - May 3 **Institute For Clinical Health Care Ethics** — Location: St. Louis University, Margaret McCormick Doisy Learning Resources Center, St. Louis, MO. Contact: St. Louis University School of Medicine, CME Office, 1402 S. Grand Blvd., St. Louis, MO 63104. 1-800-533-2712.

25 - 26 **18th Annual Obstetrics and Gynecology Symposium** — Location: Washington University Medical Center, St. Louis, MO. Contact: Cathy Caruso, CME Office, Washington University School of Medicine, 660 S. Euclid, Box 8063, St. Louis, MO 63110.

30 - May 2 **Molecular Basis of Bone Cell Physiology: Transcellular Signaling** — Location: The Sheraton West Port Inn, St. Louis, MO. Contact: Cathy Caruso, CME Office, Washington University School of Medicine, 660 S. Euclid, Box 8063,

May

1 - 3 **Protection for Research Risk** — Location: The Hyatt Regency, Union Station, St. Louis, MO. Contact: Cathy Caruso, CME Office, Washington University School of Medicine, 660 S. Euclid, Box 8063, St. Louis, MO 63110. 1-800-325-9862 or 314/362-6893.

May

3 - 5 **OR Legal Environment: Medicine Response** — Location: Don CeSar Beach Resort, St. Petersburg, FL. Contact: St. Louis University School of Medicine, CME Office, 1402 S. Grand Blvd., St. Louis, MO 63104. 1-800-533-2712.

10 - 11 **Allergy For the Clinician** — Location: Ritz Carlton Hotel, St. Louis, MO. Contact: St. Louis School of Medicine, CME Office, 1402 S. Grand Blvd., St. Louis, MO 63104. 1-800-533-2712.

13 **City-Wide Radiology Conference** — Location: Mallinckrodt Institute of Radiology, St. Louis, MO. Contact: R. Gilbert Jost, M.D., Chief of Diagnostic Radiology, Mallinckrodt Institute of Radiology, 510 S. Kingshighway, St. Louis, MO 63110. 314/362-7130.

13 - 18 **Health Care Ethics in a Pluralistic Society** — Location: St. Louis University, Margaret McCormick Doisy Learning Resource Center, St. Louis, MO. Contact: St. Louis University School of Medicine, CME Office, 1402 S. Grand, St. Louis, MO 63104. 1-800-533-2712.

16 - 18 **Vascular Surgery 1991** — Location: The New York Marriott Marquis, New York, NY. Contact: Ann J. Boehme, CMP, Associate Director for Continuing Education, Long Island Jewish Medical Center, New Hyde Park, New York, NY 11042.

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May

17 - 19 **Surgical Treatment of Surgical Fractures: Hands-On State-Of-The-Art Workshop** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: St. Louis University School of Medicine, CME Office, 1402 S. Grand, St. Louis, MO 63104. 1-800-533-2712.

June

7 **Ultrasound Perinatal Sonography** — Location: Adam's Mark Hotel, St. Louis, MO. Contact: St. Louis University School of Medicine, CME Office, 1402 S. Grand, St. Louis, MO 63104. 1-800-533-2712.

22 - 26 **Back to the Basics in the Tetons** — Location: Jackson Lake Lodge, Jackson, WY. Contact: Julie Potts/Anne Williamson, Missouri Postgraduate Course in Allergy, Inc., Suite A, 24-26 South Main Street, Liberty, MO 64068. 816/781-0902.

28 - 30 **Frontiers in Endosurgery (Urologists only)** — Location: Washington University Medical Center, St. Louis, MO. Contact: Cathy Caruso, CME Office, Washington University School of Medicine, 660 S. Euclid, Box 8063, St. Louis, MO 63110. 1-800-325-9862 or 314/362-6893.

July

20 - 27 **9th Annual Medical Seminar, Topics in Contemporary Medicine** — Location: Plummer's Great Slave Lake Lodge, Northwest Territories, Canada. Contact: Joseph F. Bocklage, M.D., 103 Oakdale Medical Center, 3366 Oakdale Avenue North, Minneapolis, MN 55422. 612/588-9478.

26 **ACLS Recertification Course** — Location: St. Louis University Medical Center, St. Louis, MO. Contact: St. Louis University School of Medicine, CME Office, 1402 S. Grand, St. Louis, MO 63104. 1-800-533-2712.

August

10 - 16 **Tenth Annual Scientific Meeting and Exhibition of the Society of Magnetic Resonance in Medicine** — Location: San Francisco, CA. Contact: SMRM, 1918 University Avenue, Suite 3C, Berkely, CA 94704. 415/841-1899. FAX: 415/841-2340.

September

27 - 28 **Advanced Trauma Life Support Provider Course** — Location: St. Louis University, St. Louis,MO. Contact: St. Louis University School of Medicine, CME Office, 1402 S. Grand, St. Louis, MO 63104. 1-800-533-2712.

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Medical School News

St. Louis University

■ Can changes in a person's lifestyle reduce high blood pressure? That question will be the focus of a five-year, $1.8 million phase II study, titled the "Trials of Hypertension Prevention II (TOHP)." The project will be conducted at St. Louis University School of Medicine, along with eight other medical centers across the country.

Jerome Cohen, M.D.

This federally-funded project, sponsored by the National Heart, Lung, and Blood Institute, will study methods of preventing high blood pressure. **Jerome D. Cohen, M.D.**, professor of internal medicine in the division of cardiology at St. Louis University School of Medicine is the principal investigator.

Researchers believe the solution lies in prevention, by diet and exercise. Preliminary results from TOHP-I indicate that salt reduction and weight loss play key roles in reducing high blood pressure.

The TOHP-II project will recruit and evaluate 250 volunteers between the ages of 30-54 with borderline high blood pressure and compare a low-salt diet, weight loss and the combination of both salt reduction and weight loss to a usual care group.

■ A nation-wide, five year research project to evaluate a new way to reduce the damaging effects of stroke will begin next month at St. Louis University Medical Center and 19 other institutions across the country. A total of more than $10 million in grants have been awarded to the various centers for this study, the first of its kind funded by the National Institutes of Health.

Stroke is the third leading cause of death or long-term disability in the United States. More than 150,000 people die annually from strokes. Called the "Trial of ORG-10172 in Acute Stroke Treatment" or TOAST, the study will determine the effectiveness of a specific heparnoid, which is a synthetic heparin-like substance, in patients with an early diagnosis of stroke. Heparin is an anticoagulant which is not completely safe for all stroke patients.

Preliminary studies indicate heparinoid ORG 10172 was successful and safe in reducing the effects of stroke, according to **Camilio R. Gomez, M.D.**, assistant professor of neurology and director of the Stroke Resource Center at St. Louis University Hospital.

Camilio Gomez, M.D.

Dr. Gomez is seeking volunteers to participate in the study. Patients must be able to come to St. Louis University Hospital within 24 hours after the onset of stroke. A complete medical and neurological examination will be conducted. Once accepted into the study, the patient will receive either heparinoid or a placebo for seven days.

■ **Cheryl N. Carmin, Ph.D.**, has been named assistant professor of psychiatry and human behavior in the anxiety disorders center of the division of behavioral medicine at St. Louis University School of Medicine. The announcement was made by **Ronald B. Margolis, Ph.D.**, associate professor of psychiatry and human behavior and director of the division.

Cheryl Carmin, Ph.D.

Dr. Carmin comes to St. Louis from the Phobia Clinic at Case Western Reserve University School of Medicine and University Hospitals of Cleveland, Ohio, where she was a post-doctoral fellow in cognitive therapy specializing in the treatment of anxiety disorders. She was responsible for the assessment and diagnosis of anxiety disorder patients as well as individual, group and couples therapy. She also served as a psychologist with the Cleveland Center for Cognitive Therapy, where she provided diagnostic evaluation and therapy services.

■ More than 100,000 men in the United States will be diagnosed with prostrate cancer this year; 30,000 of them will die from the disease.

To help promote awareness of this often ignored disease, five medical centers in St. Louis joined with more than 600 other institutions around the country to offer free prostate cancer screenings to all men age 40 and older during Prostate Cancer Awareness Week, in September. The screenings were being offered as part of a public education program sponsored by the Prostate Cancer Education Council. The council is a national group of physicians, health educators and patient support groups dedicated to informing men about prostate cancer and the importance of early detection.

■ Colorectal cancer is the second leading cause of cancer deaths in the United States, second only to lung cancer. In fact, statistics indicate that more than 120,000 people will be diagnosed with colorectal cancer annually.

The section of colon/rectal surgery at St. Louis University Medical Center is urging all men and women to undergo an annual exam for the detection of colorectal cancer. Free colorectal screenings were scheduled in November at the offices of St. Louis University's Multispecialty Group in St. Louis.

According to **Anthony M. Vernava III, M.D.**, assistant professor of surgery and section chief of colon/rectal surgery at St. Louis University School of Medicine, the United States has one of the highest incidences of colorectal cancer in the world.

■ The Gateway Catholic Ethics Network, an association of Catholic health care providers headquartered at St. Louis University Medical Center, has expressed support of Senate Bill 1766, the Patient Self-Determination Act.

The bill was introduced by **Senator John C. Danforth** of Missouri and **Senator Daniel P. Moynihan** of New York in October of 1989. It aims to allow patients to control their own health care through the use of advance directives (living wills or durable powers of attorney), even when they are no longer able to make decisions for themselves.

Under the proposed legislation, Medicare and Medicaid providers, including hospitals, nursing homes, skilled nursing facilities, home health agencies, hospices, outpatient rehabilitation facilities, home intravenous drug therapy providers, clinics and public health agencies must: Provide information to adult patients about their right under state law to execute an advance directive; inquire whether an adult patient has an advance directive, and document the response; ensure that directives are recognized to the extent permissible under state law; transfer patients if their wishes cannot be implemented; educate the staff and the community about advance directives and other ethical issues in health care.

According to **Sr. Jean deBlois, C.S.J., R.N., Ph.D.**, associate director of the Center for Health Care Ethics at St. Louis University Medical Center, the bill's passage is important in order to discourage and limit the application of treatments which are either unwanted by patients or their proxies, or which are simply useless.

The Gateway Catholic Ethics Network is comprised of 22 Catholic acute and long-term health care institutions, and was initiated in 1989 to share resources in the field of ethics and to promote education on ethical issues in health care.

■ If a Missouri nurse has made a special contribution in your life, there is an opportunity to show that person just how much he or she is appreciated. Nominations are currently being accepted through December 31 for "A Tribute to Missouri Nurses" awards program, sponsored by St. Louis University Hospital Auxiliary at St. Louis University Medical Center and St. Louis University School of Nursing.

The awards will honor five registered nurses from across the state who exemplify the best in nursing: two in the category of patient care, and one each in the categories of education, administration and research. Each honoree will receive a $1000 cash award and a specially designed crystal sculpture at a formal dinner at the Adam's Mark Hotel in April of 1991. Last year, more than 300 nominations were received and $64,000 was raised, with proceeds benefitting nurses throughout the state.

Nomination forms were mailed to hospitals, health care facilities and education centers throughout the state. In addition, the forms are available in the pharmacy section of Walgreens Drug Stores throughout Missouri, allowing individuals who have received excellent nursing care the opportunity to nominate the nurse of their choice. For more information or for a nomination form, call 314/577-8969.

Washington University

■ Washington University School of Medicine in St. Louis has been designated one of six centers for training physicians in how to better treat patients with high blood cholesterol and other lipid disorders.

The American Heart Association (AHA) announced the names of regional sites that have been designated as Lipid Research Training Centers. The three-year educational program, coodinated by the AHA with support from Bristol-Myers Squibb United States Pharmaceutical Division, will train some 1,500 physicians in state-of-the-art diagnosis and management of lipid disorders. The goal of the program is to ensure that patients receive the highest quality of care for lipid dysfunctions.

Other training centers are located at Baylor College of Medicine in Houston; Johns Hopkins University School of Medicine in Baltimore; University of California in San Francisco/Berkeley; University of Iowa in Iowa City; and University of Washington in Seattle.

Washington University will train physicians from Kansas, Missouri, Arkansas, Tennessee, Kentucky, North Carolina, West Virginia, Ohio, the southern half of Indiana and Illinois, and the western half of Pennsylvania.

Gustav Schonfeld, M.D., director of the Atherosclerosis and Lipid Research Center at Washington University School of Medicine and Kountz Professor of Medicine in the Department of Internal Medicine, will direct the training center.

Program participants will study a wide spectrum of disorders and will receive specialized training in nutrition, diet, counseling and laboratory procedures. A continuing education component following completion of the program will reinforce skills the participants have acquired. Physicians also will be able to bring a member of their office staff to participate for one day of the three-and-a-half day course.

Creation of the six training centers was made possible by a $3 million grant from the Bristol-Myers Squibb U.S. Pharmaceutical Division. Each lipid center will receive $140,000 per year for the next three years. Funds will help support salaries and benefits for faculty and staff, program materials, conference and overhead costs.

For more information about the program, call **Martha Stegmaier** at the Washington University Lipid Research Training Center, 314/362-4442.

■ Researchers at Washington University's Mallinckrodt Institute of Radiology (MIR) report increased survival rates in women with cancer of the uterine cervix when they are treated with optimal external and internal radiation.

Carlos A. Perez, M.D., professor of radiology and director of the Radiation Oncology Center at MIR, presented these findings at the American Society for Therapeutic Radiology and Oncology annual meeting held October 15-19, 1990 in Miami Beach, Florida.

The 25-year study conducted by Perez and his team of researchers evaluated 1211 women of various ages diagnosed with either stage 1, stage 2, stage 3, or stage 4 cervical cancer. All of these women were treated with external radiation and internal radiation (brachytherapy). Perez found that those women who had either stage 1 or stage 2 cervical cancer had excellent survival rates and lower recurrence rates, comparable to those reported with radical surgery.

■ A study reviewing 20 years of therapy confirms survival rates have increased in women who have been treated for advanced stages of breast cancer.

Mary Graham, M.D., a fellow in the Radiation Oncology Center at Washington University's Mallinckrodt Institute of Radiology (MIR), presented these findings at the American Society for Therapeutic Radiology and Oncology (ASTRO) during its annual meeting held October 15-19, 1990 in Miami Beach, Florida.

Graham and her team of researchers at MIR studied 237 women who had locally advanced breast cancer with a tumor greater than five centimeters, skin or chest wall involvement, or advanced lymph node disease. The study divided the women into four groups: one receiving radiation only; one, radiation and chemotherapy without mastectomy; one, radiation with mastectomy; and one group receiving all three treatment modalities (mastectomy, radiation and chemotherapy).

Their results showed that combining all three treatment modalities of chemotherapy, radiation therapy and mastectomy gave patients better local control of their tumors and increased their survival rates.

■ Cancer researchers at Washington University's Mallinckrodt Institute of Radiology (MIR) report that patients with recurrent breast cancer or head and neck cancer are gaining more control of their tumors when they are treated with radiotherapy and hyperthermia.

Bahman Emami, M.D., professor of radiology and chief of the hyperthermia section at MIR, presented the results of this study at the American Society of Therapeutic Radiology and Oncology (ASTRO) annual meeting, held October 15-19, 1990, in Miami Beach, Florida.

Scientists studied 222 adult men and women for five years. All had a recurrence of their cancer. These patients were treated with irradiation and hyperthermia. Of the patients evaluated, more than half experienced tumor control at the treated site.

University of Missouri-Columbia

■ **George Ulett, M.D., Ph.D.**, has been appointed interim director of the Missouri Institute of Psychiatry (MIP) in St. Louis, part of the MU School of Medicine. He succeeds **James Hedlund, M.D.**, who had directed the institute since 1980 and served on its faculty since 1971.

A national search will be made to hire a permanent director, said **Lester A. Bryant, M.D.**, dean of the School of Medicine, in making the announcement.

Ulett served as director of the Missouri Department of Health from 1961-1972 and headed MIP from 1964-1973. Since 1974, he has been in private practice while directing the Psychomatic Research Laboratories of St. Louis and the neuropsychiatric service at Deaconess Hospital. He is also clinical professor of psychiatry at St. Louis University.

MIP was established in 1962 as a research and teaching arm of the Department of Mental Health. The School of Medicine began operating the institute by contractual agreement in 1965, and the state reorganized and officially transferred its operation to the University in 1974. MIP is housed at the St. Louis State Hospital, the Department of Mental Health's largest facility.

■ **Marian Adams Minor, Ph.D.**, assistant professor of physical therapy, and **Jerry C. Parker, Ph.D.**, clinical professor of medicine and psychiatry, were named co-winners of the American Health Professions Association's Scholarship Award on October 30 in Seattle. Both Minor and Parker are researchers at MU's Arthritis Center and Arthritis Rehabilitation Research Center.

The annual award, which usually is given to only one person nationwide, recognized outstanding research accomplishments in the field of arthritis study. Minor and Parker wre nominated individually.

Parker, also chief of the psychology service at Harry S. Truman Memorial Hospital, has been with the two institutions since 1978. Minor, a member of the MU faculty since 1980, also is associate director of the Central Missouri Regional Arthritis Center, which is designed and funded by the Missouri Department of Health.

■ **Bernard Beitman, M.D.**, professor of psychiatry, recently spoke on chest pain and panic disorder at "Panic and Anxiety: A Decade of Progress," a conference in Geneva, Switzerland.

■ **Sheldon Braun, M.D.**, professor and director of pulmonary, critical care and environmental medicine, and **James Hinson, Jr., M.D.**, assistant professor, presented "The Effect of Six-month Outpatient High Fat Supplementation in Malnourished Chronic Obstructive Pulmonary Disease Patients" at the 56th annual scientific assembly of the American College of Chest Physicians, October 22-26 in Toronto, Canada.

■ **Graig E. Eldred, Ph.D.**, research associate professor of ophthalmology, recently gave a presentation during the satellite symposium of the International Congress of Eye Research on Retinal Degeneration in Stockholm, Sweded.

■ **Richard Finkelstein, Ph.D.**, professor and chairman of molecular microbiology and immunology, has been elected to the board of governors of the American Academy of Microbiology. The academy is the professional arm of the American Society for Microbiology. Finkelstein currently serves as president of ASM's Missouri branch.

■ **William Folk, Ph.D.**, professor and chairman of biochemistry, and **Frank Schmidt, Ph.D.**, associate professor of biochemistry, recently received $196,000 in grants from the American Cancer Society. For 15 years Folk has studied virus that cause cancer in experimental animals, trying to relate to human cancers. Schmidt's work focuses on bleomycin, the 10th most prescribed anti-tumor drug. His research may lead to modifications in the drug to reduce a side effect of lung damage.

■ **Syed Arshad Husain, M.D.**, professor and chief of child and adolescent psychiatry, has been elected chairman of the American Psychiatric Association Assembly committee on minority and underrepresented groups. He also recently presented a third-world perspective on preventing mental illness in children at the 16th annual International Vermont Conference on Prevention.

■ **Joseph Janicki, M.D.**, professor of cardiology, recently received two grants totaling more than $800,000 from the American Heart Association and the National Institutes of Health. The first, titled "Myocardial Fibrosis in Hypertrophy," runs for three years, and the NIH project, studying "The Role of Myocardial Collagen in Volume Overload Ventricle," is operative for five years.

■ **Martin L. Katz, Ph.D.**, research associate professor of ophthalmology, presented two papers on aging of the retina recently at the International Congress of Eye Research in Helsinki, Finland.

■ **Charlotte D. Parker, Ph.D.**, professor of molecular microbiology and immunology, has been appointed to a four-year term on the National Institute of Allergy and Infectious Diseases' microbiology and infectious disease research committee. The committee's duties include reviewing training grants, responses to grant applications and physician scientist awards.

■ **Virginia K. Proud, M.D.**, assistant professor of child health, recently presented a paper on "Teaching Genetics in the Basic Sciences Using Computer Literature Searching," at the annual meeting of American Medical Informatics Association in Snowbird, Utah.

■ **Graham Scott, M.D.**, assistant professor of pulmonary, critical care and environmental medicine, and **Garry Lambert, D.O.**, postdoctoral fellow, presented "Dobutamine Augments the Normal Chronotropic Response to Acute Hypoxemia" at the Southern Medical Association's 84th annual meeting October 14-17 in Nashville, Tennessee.

■ **James M.A. Weiss, M.D.**, professor and chairman of psychiatry, presented a paper at the Fifth Congress of the International Federation of Psychiatric Epidemiology in Montreal, Canada. The paper was co-authored by **Niels C. Beck, Ph.D.**, associate professor of psychiatry.

■ **Jack J. Curtis, M.D.**, professor and chief of the division of cardiothoracic surgery at the University Hospital and Clinics, presented "The Impact of Cardioplegia on Early and Late Mortality" to the American College of Chest Physicians at the group's 56th annual scientific assembly in Toronto, Canada, on October 23.

■ Members of the division of cardiothoracic surgery delivered six presentations at a recent meeting of the Missouri Chapter of the American College of Surgeons. Presenters included: **Jack J. Curtis, M.D.**, professor and division chief; **Joseph T. Walls, M.D.**, associate professor; **Weerachai Nawarawong, M.D.**, assistant professor; **and Stephen R. Hazelrigg, M.D.**, resident physician.

MSMA 133rd Annual Convention April 3-7, 1990 Crown Center, Kansas City

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New Members

■ **Mark A. Adams, M.D.**, Columbia Orthopaedic Group, 400 Keene St., Columbia 65201, has become a member of the Boone County Medical Society. Dr. Adams received his preliminary education at Drury College and obtained his medical degree at the University of Missouri-Columbia School of Medicine in 1981. He completed his residency at Johns Hopkins Hospital, Baltimore, MD. Dr. Adams specializes in orthopaedic surgery.

■ **Janet R. Albers, M.D.**, 8630 N. Oak Trafficway, Kansas City 64155, has become a member of the Missouri State Medical Association. Dr. Albers received her preliminary education at Illinois Wesleyan University and obtained her medical degree at the Southern Illinois University School of Medicine in 1987. She completed her residency at the Mayo Clinic, Rochester, MN. Dr. Albers specializes in family practice.

■ **William A. Altemeier, III, M.D.**, University of Missouri Hospital and Clinics, Dept. of Pediatrics, Room N708, One Hospital Drive, Columbia 65212, has become a member of the Boone County Medical Society. Dr. Altemeier received his preliminary education at the University of Cincinnati and obtained his medical degree at Vanderbilt University in 1958. He completed his residency at Vanderbilt University Medical Center, Nashville, TN. Dr. Altemeier specializes in pediatrics.

■ **John K. Appelbaum, M.D.**, 114 N. Taylor, St. Louis 63108, has become a member of the Missouri State Medical Association. Dr. Appelbaum received his preliminary education at St. Louis University and obtained his medical degree at the Washington University School of Medicine in 1984. He completed his residency at Washington University School of Medicine, St. Louis, MO. Dr. Appelbaum specializes in obstetrics/gynecology.

■ **James B. Bautz, M.D.**, 4400 Broadway, Suite 409, Kansas City 64111, has become a member of the Missouri State Medical Association. Dr. Bautz received his preliminary education at Amherst College and obtained his medical degree at the Harvard University School of Medicine in 1985. He completed his residency at George Washington University, Washington, D.C. Dr. Bautz specializes in internal medicine.

■ **Carol A. Blum, M.D.**, 1700 Rainbow, P.O. Box 309, Excelsior Springs 64024, has become a member of the Missouri State Medical Association. Dr. Blum received her preliminary education at Concordia College and obtained her medical degree at the University of Kansas School of Medicine in 1979. She completed her residency at the University of Kansas, Kansas City, KS. Dr. Blum specializes in anesthesiology.

■ **James S. Bonner, M.D.**, 11155 Dunn Rd., St. Louis 63136, has become a member of the St. Louis Metropolitan Medical Society. Dr. Bonner obtained his medical degree at the University of Missouri-Columbia School of Medicine. He completed his residency at Case Western Reserve University, Cleveland, OH. Dr. Bonner specializes in neurology.

■ **Richard R. Brummett, Jr., M.D.**, P.O. Box 877, St. Joseph 64508, has become a member of the Buchanan County Medical Society. Dr. Brummett received his preliminary education at the University of Kansas and obtained his medical degree at the University of Kansas School of Medicine in 1986. He completed his residency at Thomas Jefferson University Hospital, Philadelphia, PA. Dr. Brummett specializes in anesthesiology.

■ **Tom B. Brumitt, D.O.**, Jefferson City Radiologists, Inc., Jefferson City 65102, has become a member of the Cole County Medical Society. Dr. Brumitt received his preliminary education at Central Methodist College and obtained his osteopathic degree at the Kirksville College of Osteopathic Medicine in 1982. He completed his residency at Still Regional Medical Center, Jefferson City, MO. Dr. Brumitt specializes in diagnostic radiology.

■ **Charles E. Bruso, M.D.**, 901 Robidaux, St. Joseph 64501, has become a member of the Buchanan County Medical Society. Dr. Bruso received his preliminary education at the University of Kansas and obtained his medical degree at the University of Kansas School of Medicine in 1982. He completed his residencies at the Medical College of Wisconsin, Milwaukee, WI, and the University of Michigan, Ann Arbor, MI. Dr. Bruso specializes in radiation oncology and internal medicine.

■ **John K. Burkus, M.D.**, 3635 Vista, St. Louis 63110, has become a member of the Missouri State Medical Association. Dr. Burkus received his preliminary education at Yale University and obtained his medical degree at the Yale University School of Medicine in 1979. He completed his residency at Yale-New Haven Hospital, New Haven, CT. Dr. Burkus specializes in orthopedic surgery.

■ **Sophia M. Chung, M.D.**, Bethesda Eye Institute, 3655 Vista Ave., St. Louis 63110, has become a member of the St. Louis Metropolitan Medical Society. Dr. Chung obtained her medical degree at the Duke University School of Medicine in 1985. She completed her residency at the Cullen Eye Institute, Baylor College of Medicine, Houston, TX. Dr. Chung specializes in ophthalmology.

■ **Gail L. Clark, M.D.**, 222 S. Woods Mill Rd., Suite 510N, Chesterfield 63017, has become a member of the Missouri State Medical Association. Dr. Clark received her preliminary education at Adelphi University and obtained her medical degree at St. Louis University School of Medicine in 1974. She completed her residency at Barnes Hospital, St. Louis, MO. Dr. Clark specializes in internal medicine.

■ **Patrick T. Conner, M.D.**, 1235 E. Cherokee, Springfield 65804, has become a member of the Greene County Medical Society. Dr. Conner received his preliminary education at Texas A & M University and obtained his medical degree at the University of Texas in 1982. He completed his residency at the University of Oklahoma, Oklahoma City, OK. Dr. Conner specializes in emergency medicine.

■ **H. Mark Crabtree, M.D.**, 1965 S. Fremont, Suite 2500, Springfield 65804, has become a member of the Greene County Medical Society. Dr. Crabtree received his preliminary education at Arkansas State University and obtained his medical degree at the University of Arkansas for Medical Sciences in 1984. He completed his residency at University Hospital, Little Rock, AR. Dr. Crabtree specializes in neurosurgery.

■ **R. Raymond Cunningham, M.D.**, Columbia Spine Center, 400 Keene St., Columbia 65201, has become a member of the Boone County Medical Society. Dr. Cunningham received his preliminary education at Drury College and obtained his medical degree at the University of Missouri-Columbia in 1970. He completed his residency at the University of Missouri-Columbia, Columbia, MO. Dr. Cunningham specializes in orthopaedic surgery.

■ **Denise T. Curry, M.D.**, Mental Health Group of St. Louis, 6400 Clayton Rd., Suite 412, St. Louis 63117, has become a member of the Missouri State Medical Association. Dr. Curry obtained her medical degree at the University of Alabama School of Medicine in 1986. She completed her residency at the University of Alabama Hospital, Birmingham, AL. Dr. Curry specializes in psychiatry.

■ **Herbert E. Dempsey, D.O.**, Lee's Summit Clinic, Inc., 615 W. 3rd St., Lee's Summit 64063, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Dempsey received his preliminary education at the University of Missouri and obtained his osteopathic degree at the University of Health Science in 1988. He completed his residency at Dallas Memorial Hospital, Dallas, TX. Dr. Dempsey specializes in general practice.

■ **Tamara K. Ehlert, M.D.**, 777 S. New Ballas, Suite 201 West, St. Louis 63141, has become a member of the St. Louis Metropolitan Medical Society. Dr. Ehlert obtained her medical degree at the Univesity of Wisconsin School of Medicine in 1983. She completed her residency at the Medical Center Hospital of Vermont, Burlington, VT. Dr. Ehlert specializes in otolaryngology.

■ **David B. Elias, M.D.**, 3217 S. Providence, Columbia 65203, has become a member of the Boone County Medical Society. Dr. Elias received his preliminary education at Vanderbilt University and obtained his medical degree at the University of Tennessee-Memphis in 1987. He completed his residency at the University of Tennessee, Memphis, TN. Dr. Elias specializes in internal medicine.

■ **Glenn A. Fromme, M.D.**, 1900 S. National, Suite 1800, Springfield 65804, has become a member of the Greene County Medical Society. Dr. Fromme obtained his medical degree at the University of Wisconsin in 1976. He completed his residency at the Mayo Clinic, Rochester, MN. Dr. Fromme specializes in anesthesiology.

■ **Jerry L. Gibbons, D.O.**, 13610 Barrett Office Dr., Suite 105, St. Louis 63021, has become a member of the St. Louis Metropolitan Medical Society. Dr. Gibbons obtained his osteopathic degree at the University of Health Sciences in 1970. He completed his residency at Oklahoma Osteopathic Hospital, Tulsa, OK. Dr. Gibbons specializes in anesthesiology.

■ **William T. Grant, M.D.**, 533 Couch Ave., St. Louis 63122, has become a member of the Missouri State Medical Association. Dr. Grant received his preliminary education at Occidental College and obtained his medical degree at the Washington University School of Medicine in 1981. He completed his residency at the University of Virginia Medical Center, Charlottesville, VA. Dr. Grant specializes in sports medicine.

■ **Dennis J. Hey, D.O.**, Dept. of Neonatology, 24th & Gillham Rd., Kansas City 64108, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Hey received his preliminary education at Northeast Missouri State University and obtained his osteopathic degree at the Kansas City College of Osteopathy & Surgery in 1970. He completed his residency at the Osteopathic Hospital, Kansas City, MO. Dr. Hey specializes in pediatrics and neonatology.

■ **John B. Holds, M.D.**, 3635 Vista Ave., St. Louis 63110, has become a member of the Missouri State Medical Association. Dr. Holds received his preliminary education at Trinity University and obtained his medical degree at Southwestern Medical School in 1983. He completed his residency at the University of Utah, Salt Lake City, UT. Dr. Holds specializes in ophthalmology.

■ **Robert W. Jones, M.D.**, 1202 Kentucky, West Plains 65775, has become a member of the South Central County Medical Society. Dr. Jones received his preliminary education at Brigham Young University and obtained his medical degree at the Washington University School of Medicine in 1984. He completed his residency at Barnes Hospital, St. Louis, MO. Dr. Jones specializes in ophthalmology.

■ **Ali Khojasteh, M.D.**, Memorial Community Hospital Cancer Center, 1432 Southwest Blvd., Jefferson City 65109, has become a member of the Cole County Medical Society. Dr. Khojasteh received his preliminary education at Pahlavi University-Persia and obtained his medical degree at the Pahlavi University School of Medicine in 1974. He completed his residency at the University of Pennsylvania, Philadelphia, PA. Dr. Khojasteh specializes in internal medicine.

■ **James E. Kline, M.D.**, 1322 N. 36th, St. Joseph 64506, has become a member of the Buchanan County Medical Society. Dr. Kline received his preliminary education at the University of Missouri-Kansas City and obtained his medical degree at the UMKC School of Medicine in 1986. He completed his residency at St. John's Mercy Medical Center, St. Louis, MO. Dr. Kline specializes in obstetrics/gynecology.

■ **Linda M. Klutho, M.D.**, 224 S. Woods Mill Rd., Suite 500-South, Chesterfield 63017, has become a member of the St. Louis Metropolitan Medical Society. Dr. Klutho obtained her medical degree at the University of Missouri-Columbia School of Medicine in 1984. She completed her residency at the University of North Carolina, Chapel Hill, NC. Dr. Klutho specializes in internal medicine.

■ **Arthur A. Kort, M.D.,** 5453 Chippewa, St. Louis 63109, has become a member of the St. Louis Metropolitan Medical Society. Dr. Kort obtained his medical degree at the New York University School of Medicine in 1978. He completed his residency at Albany Medical Center, Albany, NY. Dr. Kort specializes in internal medicine.

■ **James F. Loomis, Jr., M.D.,** 675 Old Ballas Rd., St. Louis 63141, has become a member of the St. Louis Metropolitan Medical Society. Dr. Loomis obtained his medical degree at the University of Arkansas in 1985. He completed his residency at Barnes Hospital, St. Louis, MO. Dr. Loomis specializes in internal medicine.

■ **Marc D. Malkoff, M.D.,** St. Louis University Medical Center, Dept. of Neurology, 3635 Vista Ave., St. Louis 63110, has become a member of the Missouri State Medical Association. Dr. Malkoff received his preliminary education at Kent State University and obtained his medical degree at Northeastern Ohio University College of Medicine in 1984. He completed his residency at Emory Unversity, Atlanta, GA. Dr. Malkoff specializes in neurology.

■ **Robert A. Martin, M.D.,** 805 Kentucky, West Plains 65775, has become a member of the South Central County Medical Society. Dr. Martin received his preliminary education at Kansas Newman College and obtained his medical degree at the University of Kansas School of Medicine in 1987. He completed his residency at the St. Francis Regional Medical Center, Wichita, KS. Dr. Martin specializes in family practice.

■ **Joseph A. Meacham, M.D.,** 2900 Lemay Ferry Road, Suite 206, St. Louis 63125, has become a member of the St. Louis Metropolitan Medical Socity. Dr. Meacham obtained his medical degree at Ohio State University School of Medicine in 1975. He completed his residency at Barnes Hospital, St. Louis, MO. Dr. Meacham specializes in internal medicine.

■ **John A. Merkle, M.D.,** 2344 Hampton Ave., St. Louis 63139, has become a member of the St. Louis Metropolitan Medical Society. Dr. Merkle obtained his medical degree at the Southern Illinois University School of Medicine in 1980. He completed his residency at St. Luke's Hospital, Kansas City, MO. Dr. Merkle specializes in diagnostic radiology.

■ **Gilbert L. Mobley, M.D.,** 1235 E. Cherokee, Springfield 65804, has become a member of the Greene County Medical Society. Dr. Mobley received his preliminary education at the University of Georgia and obtained his medical degree at the Medical College of Georgia in 1982. He completed his residency at Truman Medical Center, Kansas City, MO. Dr. Mobley specializes in emergency medicine.

■ **Thomas C. Moffe, M.D.,** 1001 E. Primrose, Springfield 65807, has become a member of the Greene County Medical Society. Dr. Moffe received his preliminary education at the State University of New York and obtained his medical degree at the State University of New York School of Medicine in 1984. He completed his residency at the State University of New York, Buffalo, NY. Dr. Moffe specializes in surgery.

■ **Brad L. Moseley, M.D.,** Osage Beach 65065, has become a member of the Lake of the Ozarks County Medical Society. Dr. Mosely received his preliminary education and obtained his medical degree at the University of Missouri-Kansas City in 1987. He completed his residency at Jefferson Regional Medical Center, Pine Bluff, AR. Dr. Moseley specializes in family practice.

■ **Mary K. O'Dowd, M.D.,** 1538 Woodlake Dr., Chesterfield 63017, has become a member of the Missouri State Medical Asssociation. Dr. O'Dowd received her preliminary education at Northwestern University and obtained her medical degree at the Northwestern University Medical School in 1986. She completed her residency at Presbyterian/St. Luke's Medical Center, Denver, CO. Dr. O'Dowd specializes in internal medicine.

■ **Joseph V. Otten, M.D.,** 12255 DePaul Dr., Suite 360, Bridgeton 63044, has become a member of the St. Louis Metropolitan Medical Society. Dr. Otten obtained his medical degree at the St. Louis University School of Medicine in 1985. He completed his residency at Mt. Carmel Mercy Hospital, Detroit, MI. Dr. Otten specializes in orthopedics.

■ **Virginia K. Proud, M.D.,** Dept. of Child Health, University of Missouri-Columbia, One Hospital Drive, NW503, Columbia 65212, has become a member of the Boone County Medical Society. Dr. Proud received her preliminary education at the University of Delaware and obtained her medical degree at the University of Virginia School of Medicine in 1975. She completed her residency at NCV-VCU, Richmond, VA. Dr. Proud specializes in pediatrics.

■ **Richard D. Purcell, M.D.,** 3443 S. National, Springfield 65807, has become a member of the Missouri State Medical Association. Dr. Purcell received his preliminary education at Cameron University and obtained his medical degree at the University of Oklahoma College of Medicine in 1987. He completed his residency at the University of Oklahoma College of Medicine, Tulsa, OK. Dr. Purcell specializes in internal medicine.

■ **Stephen M. Reeder, M.D.,** 3443 S. National, Springfield 65807, has become a member of the Greene County Medical Society. Dr. Reeder received his preliminary education at the University of Kansas and obtained his medical degree at the University of Kansas School of Medicine in 1987. He completed his residency at St. Luke's Hospital, Kansas City, MO. Dr. Reeder specializes in internal medicine.

■ **Mark S. Reinsel, M.D.,** 6650 Troost, Kansas City 64131, has become a member of the Missouri State Medical Association. Dr. Reinsel received his preliminary education and obtained his medical degree at the University of Missouri-Kansas City in 1984. He completed his residency at the University of Kansas, Kansas City, KS. Dr. Reinsel specializes in radiology.

■ **Stephen L. Reintjes, M.D.,** Rockhill Medical Plaza West, 6675 Holmes Rd., Suite 420, Kansas City 64131, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Reintjes received his preliminary education at Georgetown University and obtained his medical degree at the University of Kansas School of Medicine in 1983. He completed his residency at the University of Kansas Medical Center, Kansas City, KS. Dr. Reintjes specializes in neurosurgery.

■ **Michael Rosenbloom, M.D.,** #1 Barnes Hospital Plaza, Ste., #3105, St. Louis 63110, has become a member of the Missouri State Medical Association. Dr. Rosenbloom received his preliminary education at SUNY-Stonybrook and obtained his medical degree at the New York University School of Medicine in 1981. He completed his residency at Washington University School of Medicine, St. Louis, MO. Dr. Rosenbloom specializes in cardiothoracic surgery.

■ **David E. Schlarman, M.D.,** 621 S. New Ballas Rd., St. Louis 63141, has become a member of the St. Louis Metropolitan Medical Society. Dr. Schlarman obtained his medical degree at the St. Louis University School of Medicine in 1985. He completed his residency at St. Louis University, St. Louis, MO. Dr. Schlarman specializes in general surgery.

■ **Charles C. Schultz, M.D.,** 11115 New Halls Ferry, Ste., 303, Florissant 63033, has become a member of the St. Louis Metropolitan Medical Society. Dr. Schultz received his preliminary education at Kansas State University and obtained his medical degree at the University of Kansas School of Medicine in 1983. He completed his residency at St. Luke's Hospital, Kansas City, MO. Dr. Schultz specializes in general surgery.

■ **Steven D. Segraves, M.D.,** 6400 Prospect, Suite 312, Kansas City 64132, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Segraves received his preliminary education at the University of Kansas and obtained his medical degree at the University of Kansas School of Medicine in 1986. He completed his residency at the University of Kansas Medical Center, Kansas City, KS. Dr. Segraves specializes in psychiatry.

■ **Craig S. Shapiro, M.D.,** 5799 Broadmoor, Mission, KS 66202, has become a member of the Missouri State Medical Association. Dr. Shapiro received his preliminary education at the University of Nebraska and obtained his medical degree at the University of Nebraska School of Medicine in 1987. He completed his residency at the Medical College of Virginia, Richmond, VA. Dr. Shapiro specializes in internal medicine.

■ **William C. Simon, D.O.,** Box 61, Macks Creek 65786, has become a member of the Lake of the Ozarks County Medical Society. Dr. Simon received his preliminary education at Park College and obtained his osteopathic degree at the University of Health Sciences in 1989. He completed his residency at Riverside Hospital, Wichita, KS. Dr. Simon specializes in family practice.

■ **Kenneth R. Smith, M.D.,** 1115 Alaska, West Plains 65775, has become a member of the South Central County Medical Society. Dr. Smith received his preliminary education at Colorado State University and obtained his medical degree at the University of Kansas in 1985. He completed his residency at the University of Kansas, Kansas City, KS. Dr. Smith specializes in orthopedic surgery.

■ **Elizabeth J. Syzek, M.D.,** 500 Keene St., Suite 203, Columbia 65201, has become a member of the Boone County Medical Society. Dr. Syzek received her preliminary education at the University of Dayton and obtained her medical degree at the Ohio State University College of Medicine in 1985. She completed her residency at the Oklahoma Medical Center, Oklahoma City, OK. Dr. Syzek specializes in radiation oncology.

■ **Deborah G. Thomas, M.D.,** 63 Doctors' Park, Cape Girardeau 63701, has become a member of the Cape Girardeau County Medical Society. Dr. Thomas received her preliminary education at Southeast Missouri State University and obtained her medical degree at the University of Missouri-Columbia School of Medicine in 1987. She completed her residency at the University of Nebraska Medical Center, Omaha, NE. Dr. Thomas specializes in family practice.

■ **Charles R. Venneman, II, M.D.,** 1000 Carondelet Dr., Kansas City 64114, has become a member of the Missouri State Medical Association. Dr. Venneman received his preliminary education at the University of Kansas and obtained his medical degree at the University of Kansas School of Medicine in 1986. He completed his residency at the Mayo Graduate School of Medicine, Rochester, MN. Dr. Venneman specializes in anesthesiology.

■ **Martin B. Wax, M.D.,** Campus Box 8096, 660 S. Euclid, St. Louis 63110, has become a member of the Missouri State Medical Association. Dr. Wax received his preliminary education at the University of Rochester and obtained his medical degree at the Southern University School of Medicine in 1978. He completed his residency at Wills Eye Hospital, Philadelphia, PA. Dr. Wax specializes in ophthalmology.

■ **Stephen W. Welsh, M.D.,** 401 Keene, Columbia 65201, has become a member of the Boone County Medical Society. Dr. Welsh received his preliminary education at Creighton University and obtained his medical degree at the Creighton University School of Medicine in 1979. He completed his residency at the University of North Dakota, Grand Forks, ND. Dr. Welsh specializes in internal medicine.

■ **Susan H. Westfall, M.D.,** 224 S. Woods Mill Rd., Suite 220 South, Chesterfield 63017, has become a member of the Missouri State Medical Association. Dr. Westfall received her preliminary education at Indiana State University and obtained her medical degree at the Indiana University School of Medicine in 1984. She completed her residency at St. Louis University, St. Louis, MO. Dr. Westfall specializes in surgery.

■ **Robert P. Zitsch, III, M.D.**, Dept. of Surgery, One Hospital Drive, MA314, University of Missouri, Columbia 65212, has become a member of the Boone County Medical Society. Dr. Zitsch received his preliminary education at the University of Alabama and obtained hs medical degree at the University of Alabama School of Medicine in 1982. He completed his residency at the University of Cincinnati, Cincinnati, OH. Dr. Zitsch specializes in otolaryngology.

■ **Terrance J. Zuerlein, M.D.**, 24th & Gillham Rd., Kansas City 64108, has become a member of the Metropolitan Medical Society of Greater Kansas City. Dr. Zuerlein received his preliminary education at the University of Nebraska and obtained his medical degree at the University of Nebraska College of Medicine in 1985. He completed his residency at Vanderbilt University Medical Center, Nashville, TN. Dr. Zuerlein specializes in neonatology.

■ Resident Section

James A. Boozan, M.D. — *otolaryngology*
Jennifer L. Clark, M.D. — *physical medicine and rehabilitation*
John C. Clohisy, M.D. — *orthopedic surgery*
Kevin A. Coleman, M.D. — *anesthesiology*
John W. Ely, M.D. — *family medicine*
Corinne M. Gallagher, M.D. — *anesthesiology*
Michael W. Knudsen, M.D. — *pediatrics*
David M. Peeples, M.D. — *neurology*
Pranahitha B. Reddy, M.D. — *psychiatry*
Jeffrey C. Reese, M.D. — *general surgery*
Rawel Singh, M.D. — *internal medicine*
Brad S. Sloan, M.D. — *no specialty given*
Heidi B. White, M.D. — *internal medicine*
Lynne M. Zwart, M.D. — *pediatrics*

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11. I certify that the statements made by me above are correct and complete.

Valerie A. Peters, *Managing Editor*

In Memoriam

■ **Irwin S. Brown, M.D.**, died July 12, 1990 at the age of 92. Dr. Brown, a urologist, practiced medicine in Kansas City for 41 years. He was a Navy captain in World War II and received a Bronze Star. He retired from the Naval Reserves as a rear admiral. He obtained his medical degree at the University of Kansas School of Medicine in 1924. Dr. Brown was a member of the Metropolitan Medical Society of Greater Kansas City.

■ **James W. Crain, M.D.**, died August 21, 1990 at the age of 77. Dr. Crain, a general surgeon, practiced medicine in Branson for more than 23 years. He obtained his medical degree at the Indiana University School of Medicine in 1939. Dr. Crain was a member of the Tri-Lakes County Medical Society.

■ **Earl E. Feind, M.D.**, died September 3, 1990 at the age of 80. Dr. Feind, a general practitioner, practiced medicine in the Rolla area for more than 50 years. In 1937, he became the director of student health and senior staff physician for the Missouri School of Mines, now the University of Missouri-Rolla. He obtained his medical degree at the University of South Dakota School of Medicine in 1933. Dr. Feind was a member of the Mid-Missouri County Medical Society.

■ **Henry W. Noller, M.D.**, died October 30, 1990 at the age of 71. Dr. Noller, an internal medicine specialist, practiced medicine in St. Louis for 36 years. He formerly served on the staffs of Missouri Baptist Hospital and St. Luke's Hospital. He obtained his medical degree at Washington University School of Medicine in 1944. Dr. Noller was a member of the St. Louis Metropolitan Medical Society.

■ **D. LeRoy Parsons, M.D.**, died September 2, 1990 at the age of 58. Dr. Parsons, a family practitioner, practiced medicine in Cape Girardeau for 25 years before retiring in 1987. He was a captain in the U.S. Army and served in Augsburg, Germany. He obtained his medical degree at the University of Tennessee Medical School in 1958. Dr. Parsons was a member of the Cape Girardeau County Medical Society.

■ **Joseph H. Printz, M.D.**, died September 23, 1990 at the age of 79. Dr. Printz, a general surgeon, practiced medicine in Kansas City for 47 years and served on the staffs of Menorah, Baptist and Shawnee Mission medical centers. He was a professor of clinical surgery at the University of Missouri-Kansas City School of Medicine. He obtained his medical degree at Washington University School of Medicine in 1937. Dr. Printz was a member of the Metropolitan Medical Society of Greater Kansas City.

■ **H.R. Senturia, M.D.**, died August 23, 1990 at the age of 81. Dr. Senturia, a radiologist, practiced medicine in St. Louis for more than 35 years. Professor emeritus at Washington University School of Medicine, he was also a radiologist at Jewish Hospital, where he served as chief of radiology from 1953 to 1972. He also served in the Army in World War II and was a consultant in roentgenology in the Air Force. He obtained his medical degree at Washington University School of Medicine in 1933. Dr. Senturia was a member of the St. Louis Metropolitan Medical Society.

■ **Harold C. Stricker, M.D.**, died October 31, 1990 at the age of 72. Dr. Stricker, an obstetrician/gynecologist, practiced medicine in Jefferson City for more than 30 years before retiring in 1983. He was a U.S. Army World War II and Korean War veteran, serving as a captain. He obtained his medical degree at Washington University School of Medicine in 1944. Dr. Stricker was a member of the Cole County Medical Society.

■ **Richard Sutton, Jr., M.D.**, died August 30, 1990 at the age of 82. Dr. Sutton, a dermatologist, practiced medicine in Kansas City for 44 years before retiring in 1976. He taught at the University of Kansas Medical Center beginning in 1932, was chairman of the dermatology department from 1949 to 1956 and was a professor there until 1969. He was also a clinical professor at the University of Missouri-Kansas City School of Medicine from 1967 to 1970. He obtained his medical degree at the University of Michigan School of Medicine in 1929. Dr. Sutton was a member of the Metropolitan Medical Society of Greater Kansas City.

Physician's Recognition Awards

Twenty-two MSMA members qualified for the MSMA-AMA Physician's Recognition Award during September 1990. The award, presented by the Missouri State Medical Association and the American Medical Association, is given to those physicians who voluntarily complete 150 credit hours of continuing medical education within a three-year period. Sixty of the credit hours must be earned in Category 1 programs.

Audrain

Harold D. Lankford, *Mexico*

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In addition, in view of The Copyright Revision Act of 1976, effective Jan. 1, 1978, transmittal letters to the editor should contain the following language: "In consideration of the Missouri State Medical Association's taking action in reviewing and editing my submission, the author(s) undersigned hereby transfers, assigns or otherwise conveys all copyright ownership to the MSMA in the event that such work is published by the MSMA." We regret that transmittal letters not containing the foregoing language signed by all authors of the submission will necessitate delay in review of the manuscript. Please include the title of the article in the transmittal letter.

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References should be cited in numerical order in the text and arranged at the end of the article in the same order in which they are cited. The reference should give name of author, title of article, name of periodical, volume number, initial page number and year. Authors are responsible for reference accuracy.

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Reprint order blanks will accompany proof, and sent to authors prior to publication.

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Editorials should be written in clear, concise language. Length should be about two or three pages typed with double spacing. Letters will be published at the discretion of the editor, managing editor, and Editorial Board.

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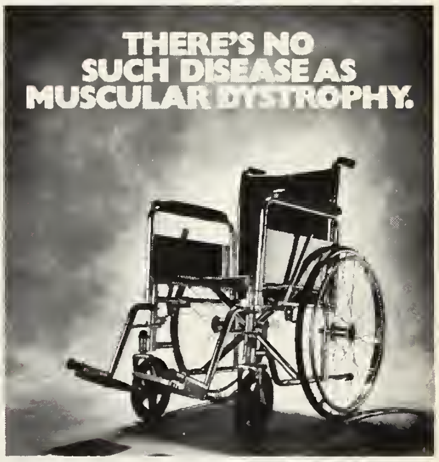

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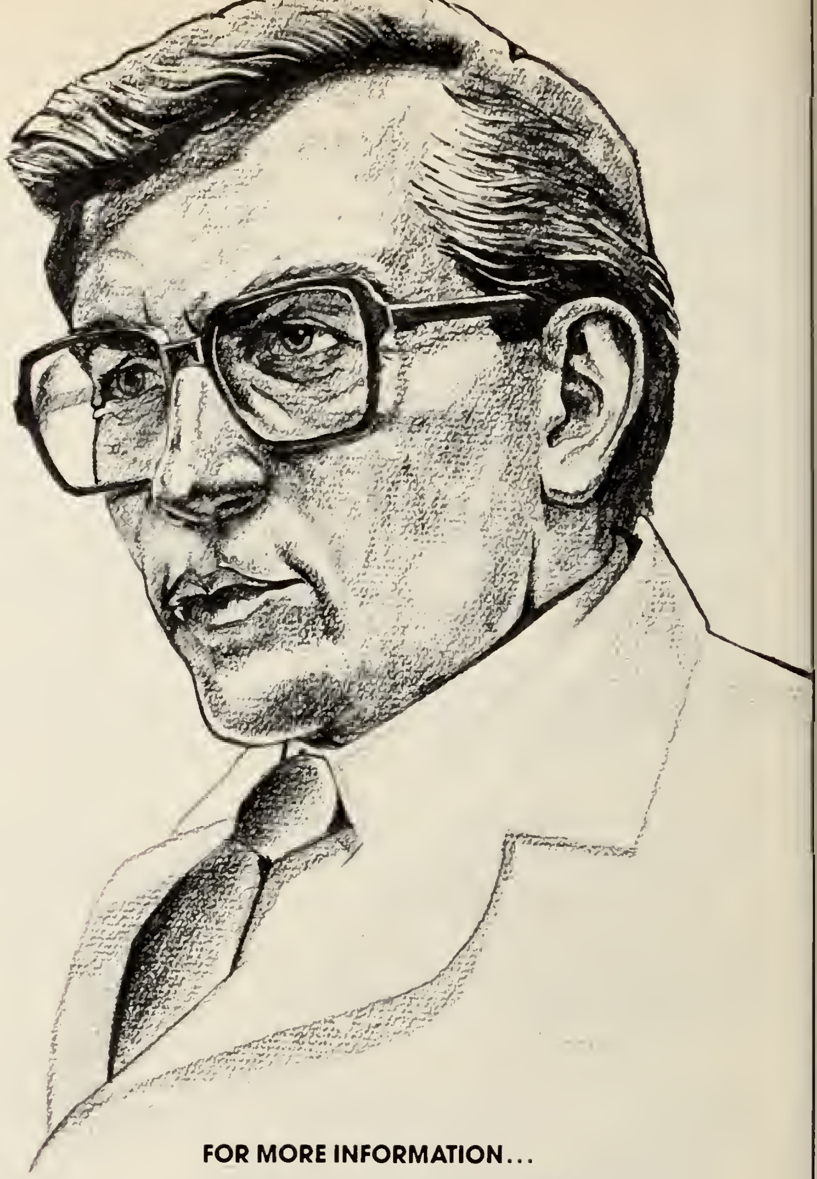

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Contraindications: VASOTEC® (Enalapril Maleate, MSD) is contraindicated in patients who are hypersensitive to this product and in patients with a history of angioedema related to previous treatment with an ACE inhibitor.

Warnings: *Angioedema.* Angioedema of the face, extremities, lips, tongue, glottis, and/or larynx has been reported in patients treated with ACE inhibitors, including VASOTEC. In such cases, VASOTEC should be promptly discontinued and the patient carefully observed until the swelling disappears. In instances where swelling has been confined to the face and lips, the condition has generally resolved without treatment, although antihistamines have been useful in relieving symptoms. Angioedema associated with laryngeal edema may be fatal. **Where there is involvement of the tongue, glottis, or larynx likely to cause airway obstruction, appropriate therapy, e.g., subcutaneous epinephrine solution 1:1000 (0.3 mL to 0.5 mL), should be promptly administered.** (See ADVERSE REACTIONS.)

Hypotension. Excessive hypotension is rare in uncomplicated hypertensive patients treated with VASOTEC alone. Patients with heart failure given VASOTEC commonly have some reduction in blood pressure, especially with the first dose, but discontinuation of therapy for continuing symptomatic hypotension usually is not necessary when dosing instructions are followed; caution should be observed when initiating therapy. (See DOSAGE AND ADMINISTRATION.) Patients at risk for excessive hypotension, sometimes associated with oliguria and/or progressive azotemia and rarely with acute renal failure and/or death, include those with the following conditions or characteristics: heart failure, hyponatremia, high-dose diuretic therapy, recent intensive diuresis or increase in diuretic dose, renal dialysis, or severe volume and/or salt depletion of any etiology. It may be advisable to eliminate the diuretic (except in patients with heart failure), reduce the diuretic dose, or increase salt intake cautiously before initiating therapy with VASOTEC in patients at risk for excessive hypotension who are able to tolerate such adjustments. (See PRECAUTIONS, *Drug Interactions* and ADVERSE REACTIONS.) In patients at risk for excessive hypotension, therapy should be started under very close medical supervision and such patients should be followed closely for the first two weeks of treatment and whenever the dose of enalapril and/or diuretic is increased. Similar considerations may apply to patients with ischemic heart disease or cardiovascular disease in whom an excessive fall in blood pressure could result in a myocardial infarction or cerebrovascular accident. If excessive hypotension occurs, the patient should be placed in the supine position and, if necessary, receive an intravenous infusion of normal saline. A transient hypotensive response is not a contraindication to further doses of VASOTEC, which usually can be given without difficulty once the blood pressure has stabilized. If symptomatic hypotension develops, a dose reduction or discontinuation of VASOTEC or concomitant diuretic may be necessary.

Neutropenia/Agranulocytosis: Another ACE inhibitor, captopril, has been shown to cause agranulocytosis and bone marrow depression, rarely in uncomplicated patients but more frequently in patients with renal impairment, especially if they also have a collagen vascular disease. Available data from clinical trials of enalapril are insufficient to show that enalapril does not cause agranulocytosis at similar rates. Foreign marketing experience has revealed several cases of neutropenia or agranulocytosis in which a causal relationship to enalapril cannot be excluded. Periodic monitoring of white blood cell counts in patients with collagen vascular disease and renal disease should be considered.

Precautions: *General. Impaired Renal Function.* As a consequence of inhibiting the renin-angiotensin-aldosterone system, changes in renal function may be anticipated in susceptible individuals. In patients with severe heart failure whose renal function may depend on the activity of the renin-angiotensin-aldosterone system, treatment with ACE inhibitors, including VASOTEC, may be associated with oliguria and/or progressive azotemia and rarely with acute renal failure and/or death.

In clinical studies in hypertensive patients with unilateral or bilateral renal artery stenosis, increases in blood urea nitrogen and serum creatinine were observed in 20% of patients. These increases were almost always reversible upon discontinuation of enalapril and/or diuretic therapy. In such patients, renal function should be monitored during the first few weeks of therapy.

Some patients with hypertension or heart failure with no apparent preexisting renal vascular disease have developed increases in blood urea and serum creatinine, usually minor and transient, especially when VASOTEC has been given concomitantly with a diuretic. This is more likely to occur in patients with preexisting renal impairment. Dosage reduction and/or discontinuation of the diuretic and/or VASOTEC may be required.

Evaluation of patients with hypertension or heart failure should always include assessment of renal function. (See DOSAGE AND ADMINISTRATION.)

Hyperkalemia. Elevated serum potassium (>5.7 mEq/L) was observed in approximately 1% of hypertensive patients in clinical trials. In most cases these were isolated values which resolved despite continued therapy. Hyperkalemia was a cause of discontinuation of therapy in 0.28% of hypertensive patients. In clinical trials in heart failure, hyperkalemia was observed in 3.8% of patients, but was not a cause for discontinuation.

Risk factors for the development of hyperkalemia include renal insufficiency, diabetes mellitus, and the concomitant use of potassium-sparing diuretics, potassium supplements, and/or potassium-containing salt substitutes, which should be used cautiously, if at all, with VASOTEC. (See *Drug Interactions*.)

Surgery/Anesthesia. In patients undergoing major surgery or during anesthesia with agents that produce hypotension, enalapril may block angiotensin II formation secondary to compensatory renin release. If hypotension occurs and is considered to be due to this mechanism, it can be corrected by volume expansion.

Information for Patients

Angioedema. Angioedema, including laryngeal edema, may occur especially following the first dose of enalapril. Patients should be so advised and told to report immediately any signs or symptoms suggesting angioedema (swelling of face, extremities, eyes, lips, tongue, difficulty in swallowing or breathing) and to take no more drug until they have consulted with the prescribing physician.

Hypotension. Patients should be cautioned to report lightheadedness, especially during the first few days of therapy. If actual syncope occurs, the patients should be told to discontinue the drug until they have consulted with the prescribing physician.

All patients should be cautioned that excessive perspiration and dehydration may lead to an excessive fall in blood pressure because of reduction in fluid volume. Other causes of volume depletion such as vomiting or diarrhea may also lead to a fall in blood pressure; patients should be advised to consult with the physician.

Hyperkalemia: Patients should be told not to use salt substitutes containing potassium without consulting their physician.

Neutropenia. Patients should be told to report promptly any indication of infection (e.g., sore throat, fever) which may be a sign of neutropenia.

NOTE: As with many other drugs, certain advice to patients being treated with enalapril is warranted. This information is intended to aid in the safe and effective use of this medication. It is not a disclosure of all possible adverse or intended effects.

Drug Interactions:

Hypotension. Patients on Diuretic Therapy. Patients on diuretics and especially those in whom diuretic therapy was recently instituted may occasionally experience an excessive reduction of blood pressure after initiation of therapy with enalapril. The possibility of hypotensive effects with enalapril can be minimized by either discontinuing the diuretic or increasing the salt intake prior to initiation of treatment with enalapril. If it is necessary to continue the diuretic, provide close medical supervision after the initial dose for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and DOSAGE AND ADMINISTRATION.)

Agents Causing Renin Release. The antihypertensive effect of VASOTEC is augmented by antihypertensive agents that cause renin release (e.g., diuretics).

Other Cardiovascular Agents. VASOTEC has been used concomitantly with beta-adrenergic-blocking agents, methyldopa, nitrates, calcium-blocking agents, hydralazine, prazosin, and digoxin without evidence of clinically significant adverse interactions.

Agents Increasing Serum Potassium: VASOTEC attenuates potassium loss caused by thiazide-type diuretics. Potassium-sparing diuretics (e.g., spironolactone, triamterene, or amiloride), potassium supplements, or potassium-containing salt substitutes may lead to significant increases in serum potassium. Therefore, if concomitant use of these agents is indicated because of demonstrated hypokalemia, they should be used with caution and with frequent monitoring of serum potassium. Potassium-sparing agents should generally not be used in patients with heart failure receiving VASOTEC.

Lithium: Lithium toxicity has been reported in patients receiving lithium concomitantly with drugs which cause elimination of sodium, including ACE inhibitors. A few cases of lithium toxicity have been reported in patients receiving concomitant VASOTEC and lithium and were reversible upon discontinuation of both drugs. It is recommended that serum lithium levels be monitored frequently if enalapril is administered concomitantly with lithium.

Pregnancy—Category C: There was no fetotoxicity or teratogenicity in rats treated with up to 200 mg/kg/day of enalapril (333 times the maximum human dose). Fetotoxicity, expressed as a decrease in average fetal weight, occurred in rats given 1200 mg/kg/day of enalapril but did not occur when these animals were supplemented with saline. Enalapril was not teratogenic in rabbits. However, maternal and fetal toxicity occurred in some rabbits at doses of 1 mg/kg/day or more. Saline supplementation prevented the maternal and fetal toxicity seen at doses of 3 and 10 mg/kg/day, but not at 30 mg/kg/day (50 times the maximum human dose).

Radioactivity was found to cross the placenta following administration of labeled enalapril to pregnant hamsters.

There are no adequate and well-controlled studies of enalapril in pregnant women. However, data are available that show enalapril crosses the human placenta. Because the risk of fetal toxicity with the use of ACE inhibitors has not been clearly defined, VASOTEC® (Enalapril Maleate, MSD) should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Postmarketing experience with all ACE inhibitors thus far suggests the following with regard to pregnancy outcome. Inadvertent exposure limited to the first trimester of pregnancy has not been reported to affect fetal outcome adversely. Fetal exposure during the second and third trimesters of pregnancy has been associated with fetal and neonatal morbidity and mortality.

When ACE inhibitors are used during the later stages of pregnancy, there have been reports of hypotension and decreased renal perfusion in the newborn. Oligohydramnios in the mother has also been reported, presumably representing decreased renal function in the fetus. Infants exposed *in utero* to ACE inhibitors should be closely observed for hypotension, oliguria, and hyperkalemia. If oliguria occurs, attention should be directed toward support of blood pressure and renal perfusion with the administration of fluids and pressors as appropriate. Problems associated with prematurity such as patent ductus arteriosus have occurred in association with maternal use of ACE inhibitors, but it is not clear whether they are related to ACE inhibition, maternal hypertension, or the underlying prematurity.

Nursing Mothers. Milk in lactating rats contains radioactivity following administration of ^{14}C enalapril maleate. It is not known whether this drug is secreted in human milk. Because many drugs are secreted in human milk, caution should be exercised when VASOTEC is given to a nursing mother.

Pediatric Use. Safety and effectiveness in children have not been established.

Adverse Reactions: VASOTEC has been evaluated for safety in more than 10,000 patients, including over 1000 patients treated for one year or more. VASOTEC has been found to be generally well tolerated in controlled clinical trials involving 2987 patients.

HYPERTENSION. The most frequent clinical adverse experiences in controlled trials were: headache (5.2%), dizziness (4.3%), and fatigue (3%).

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in controlled clinical trials were: diarrhea (1.4%), nausea (1.4%), rash (1.4%), cough (1.3%), orthostatic effects (1.2%), and asthenia (1.1%).

HEART FAILURE. The most frequent clinical adverse experiences in both controlled and uncontrolled trials were: dizziness (7.9%), hypotension (6.7%), orthostatic effects (2.2%), syncope (2.2%), cough (2.2%), chest pain (2.1%), and diarrhea (2.1%).

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in both controlled and uncontrolled clinical trials were: fatigue (1.8%), headache (1.8%), abdominal pain (1.6%), asthenia (1.6%), orthostatic hypotension (1.6%), vertigo (1.6%), angina pectoris (1.5%), nausea (1.3%), vomiting (1.3%), bronchitis (1.3%), dyspnea (1.3%), urinary tract infection (1.3%), rash (1.3%), and myocardial infarction (1.2%).

Other serious clinical adverse experiences occurring since the drug was marketed or adverse experiences occurring in 0.5% to 1% of patients with hypertension or heart failure in clinical trials in order of decreasing severity within each category.

Cardiovascular. Cardiac arrest, myocardial infarction or cerebrovascular accident, possibly secondary to excessive hypotension in high-risk patients (see WARNINGS, *Hypotension*); pulmonary embolism and infarction; pulmonary edema, rhythm disturbances, atrial fibrillation, palpitation.

Digestive: Ileus, pancreatitis, hepatitis (hepatocellular or cholestatic jaundice), melena, anorexia, dyspepsia, constipation, glossitis, stomatitis, dry mouth.

Musculoskeletal: Muscle cramps.

Nervous/Psychiatric: Depression, confusion, ataxia, somnolence, insomnia, nervousness, paresthesia.

Urogenital. Renal failure, oliguria, renal dysfunction (see PRECAUTIONS and DOSAGE AND ADMINISTRATION).

Respiratory: Bronchospasm, rhinorrhea, sore throat and hoarseness, asthma, upper respiratory infection.

Skin. Exfoliative dermatitis, toxic epidermal necrolysis, Stevens-Johnson syndrome, herpes zoster, erythema multiforme, urticaria, pruritus, alopecia, flushing, hyperhidrosis.

Special Senses. Blurred vision, taste alteration, anosmia, tinnitus, conjunctivitis, dry eyes, tearing.

A symptom complex has been reported which may include a positive ANA, an elevated erythrocyte sedimentation rate, arthralgias/arthritis, myalgias, fever, serositis, vasculitis, leukocytosis, eosinophilia, photosensitivity, rash, and other dermatologic manifestations.

Angioedema. Angioedema has been reported in patients receiving VASOTEC (0.2%). Angioedema associated with laryngeal edema may be fatal. If angioedema of the face, extremities, lips, tongue, glottis, and/or larynx occurs, treatment with VASOTEC should be discontinued and appropriate therapy instituted immediately. (See WARNINGS.)

Hypotension. In the hypertensive patients, hypotension occurred in 0.9% and syncope occurred in 0.5% of patients following the initial dose or during extended therapy. Hypotension or syncope was a cause for discontinuation of therapy in 0.1% of hypertensive patients. In heart failure patients, hypotension occurred in 6.7% and syncope occurred in 2.2% of patients. Hypotension or syncope was a cause for discontinuation of therapy in 1.9% of patients with heart failure. (See WARNINGS.)

Clinical Laboratory Test Findings

Serum Electrolytes: Hyperkalemia (see PRECAUTIONS), hyponatremia.

Creatinine, Blood Urea Nitrogen. In controlled clinical trials, minor increases in blood urea nitrogen and serum creatinine, reversible upon discontinuation of therapy, were observed in about 0.2% of patients with essential hypertension treated with VASOTEC alone. Increases are more likely to occur in patients receiving concomitant diuretics or in patients with renal artery stenosis. (See PRECAUTIONS.) In patients with heart failure who were also receiving diuretics with or without digitalis, increases in blood urea nitrogen or serum creatinine, usually reversible upon discontinuation of VASOTEC and/or other concomitant diuretic therapy, were observed in about 11% of patients. Increases in blood urea nitrogen or creatinine were a cause for discontinuation in 1.2% of patients.

Hemoglobin and Hematocrit. Small decreases in hemoglobin and hematocrit (mean decreases of approximately 0.3 g% and 1.0 vol%, respectively) occur frequently in either hypertension or heart failure patients treated with VASOTEC but are rarely of clinical importance unless another cause of anemia coexists. In clinical trials, less than 0.1% of patients discontinued therapy due to anemia.

Other (Causal Relationship Unknown). In marketing experience, rare cases of neutropenia, thrombocytopenia, and bone marrow depression have been reported. A few cases of hemolysis have been reported in patients with G6PD deficiency.

Liver Function Tests. Elevations of liver enzymes and/or serum bilirubin have occurred.

Dosage and Administration: *Hypertension.* In patients who are currently being treated with a diuretic, symptomatic hypotension occasionally may occur following the initial dose of VASOTEC. The diuretic should, if possible, be discontinued for two to three days before beginning therapy with VASOTEC to reduce the likelihood of hypotension. (See WARNINGS.) If the patient's blood pressure is not controlled with VASOTEC alone, diuretic therapy may be resumed.

If the diuretic cannot be discontinued, an initial dose of 2.5 mg should be used under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and PRECAUTIONS, *Drug Interactions*.)

The recommended initial dose in patients not on diuretics is 5 mg once a day. Dosage should be adjusted according to blood pressure response. The usual dosage range is 10 to 40 mg per day administered in a single dose or in two divided doses. In some patients treated once daily, the antihypertensive effect may diminish toward the end of the dosing interval. In such patients, an increase in dosage or twice-daily administration should be considered. If blood pressure is not controlled with VASOTEC alone, a diuretic may be added.

Concomitant administration of VASOTEC with potassium supplements, potassium salt substitutes, or potassium-sparing diuretics may lead to increases of serum potassium (see PRECAUTIONS).

Dosage Adjustment in Hypertensive Patients with Renal Impairment: The usual dose of enalapril is recommended for patients with a creatinine clearance > 30 mL/min (serum creatinine of up to approximately 3 mg/dL). For patients with creatinine clearance ≤ 30 mL/min (serum creatinine ≥ 3 mg/dL), the first dose is 2.5 mg once daily. The dosage may be titrated upward until blood pressure is controlled or to a maximum of 40 mg daily.

Heart Failure. VASOTEC is indicated as adjunctive therapy with diuretics and digitalis. The recommended starting dose is 2.5 mg once or twice daily. After the initial dose of VASOTEC, the patient should be observed under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and PRECAUTIONS, *Drug Interactions*.) If possible, the dose of the diuretic should be reduced, which may diminish the likelihood of hypotension. The appearance of hypotension after the initial dose of VASOTEC does not preclude subsequent careful dose titration with the drug, following effective management of the hypotension. The usual therapeutic dosing range for the treatment of heart failure is 5 to 20 mg daily given in two divided doses. The maximum daily dose is 40 mg. Once-daily dosing has been effective in a controlled study, but nearly all patients in this study were given 40 mg, the maximum recommended daily dose, and there has been much more experience with twice-daily dosing. In addition, in a placebo-controlled study which demonstrated reduced mortality in patients with severe heart failure (NYHA Class IV), patients were treated with 2.5 to 40 mg per day of VASOTEC, almost always administered in two divided doses. (See CLINICAL PHARMACOLOGY, *Pharmacodynamics and Clinical Effects*.) Dosage may be adjusted depending upon clinical or hemodynamic response. (See WARNINGS.)

Dosage Adjustment in Patients with Heart Failure and Renal Impairment or Hyponatremia. In patients with heart failure who have hyponatremia (serum sodium < 130 mEq/L) or with serum creatinine >1.6 mg/dL, therapy should be initiated at 2.5 mg daily under close medical supervision. (See DOSAGE AND ADMINISTRATION, *Heart Failure*, WARNINGS, and PRECAUTIONS, *Drug Interactions*.) The dose may be increased to 2.5 mg b.i.d., then 5 mg b.i.d. and higher as needed, usually at intervals of four days or more, if at the time of dosage adjustment there is not excessive hypotension or significant deterioration of renal function. The maximum daily dose is 40 mg.

For more detailed information, consult your MSD Representative or see Prescribing Information, Merck Sharp & Dohme, Division of Merck & Co., INC., West Point, PA 19486

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For a Brief Summary of Prescribing Information, please see the last page of this advertisement.

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